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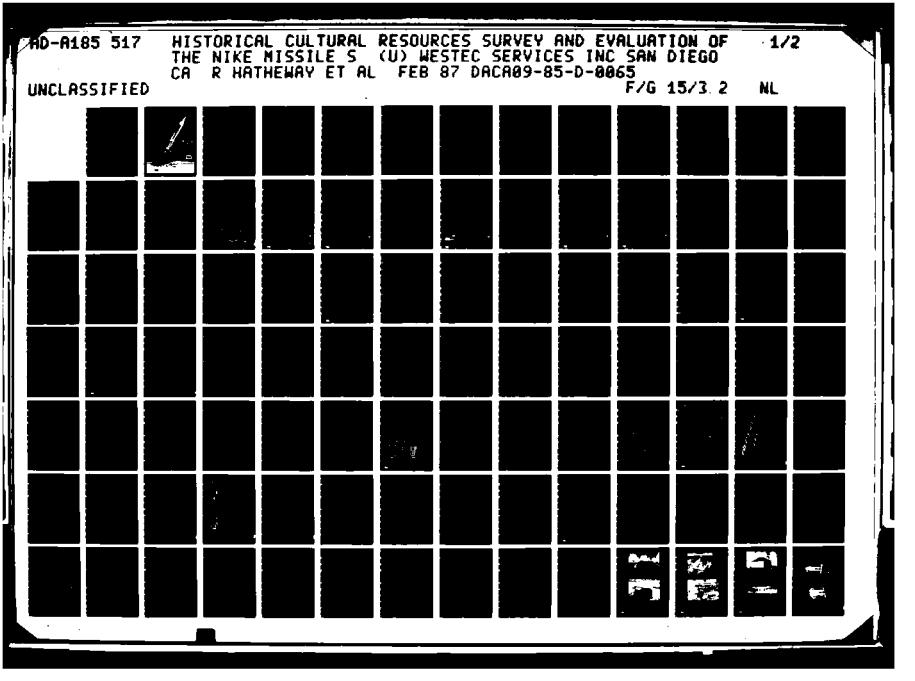

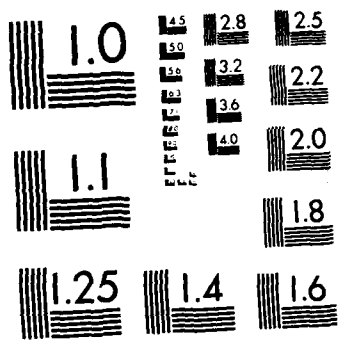

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Survey and Evaluation of Nike Missile Sites in the Angeles National Forest Los Angeles County, California

PREPARED FOR:
The U.S. Army Corps of Engineers
Los Angeles District

WESTEC Services, Inc. 5510 Morehouse Drive, San Diego, CA 92121

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This study was conducted to determine the eligibility of several Nike sites within the boundaries of the Angeles National Forest in relation to the National Register of Historic Places. The sites investigated were Mt. Gleason (LA-04-L), Barley Flats (LA-09-L), Los Pinetos (LA-94-C&L), and Magic Mountain/Lang (LA-98-C&L). Information gathered as part of this study has made it possible to make a positive recommendation of National Register of Historic

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Places eligibility for the Mt. Gleason and Los Pinetos installations. These sites (which are less than 50 years old) were constructed during the period 1954-1956, and exhibit features of exceptional importance which are unique among recorded sites in the Los Angeles area. Finally, it was determined that the Nike installations located at Barley Flats and at Magic Mountain/Lang were not eligible to the National Register of Historic Places.

HISTORICAL CULTURAL RESOURCES SURVEY AND EVALUATION OF THE NIKE MISSILE SITES IN THE ANGELES NATIONAL FOREST LOS ANGELES COUNTY, CALIFORNIA

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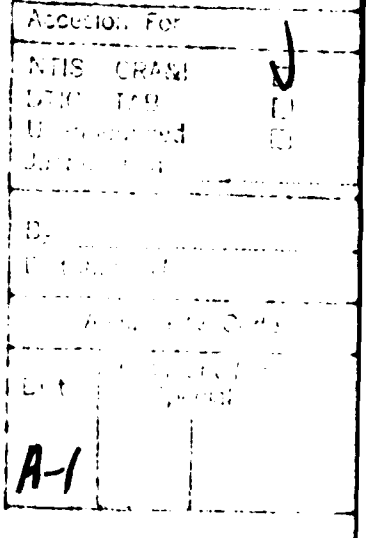
February 1987



EXECUTIVE SUMMARY

This study was conducted to determine the eligibility of several Nike sites within the boundaries of the Angeles National Forest in relation to the National Register of Historic Places. The sites investigated were Mt. Gleason (LA-04-L), Barley Flats (LA-09-L), Los Pinetos (LA-94-C&L), and Magic Mountain/Lang (LA-98-C&L). Information gathered as part of this study has made it possible to make a positive recommendation of National Register of Historic Places eligibility for the Mt. Gleason and Los Pinetos installations. These sites (which are less than 50 years old) were constructed during the period 1954-1956, and exhibit features of exceptional importance which are unique among recorded sites in the Los Angeles area. Finally, it was determined that the Nike installations located at Barley Flats and at Magic Mountain/Lang were not eligible to the National Register of Historic Places. The above determinations are summarized as follows:

MT. GLEASON

Mt. Gleason was the first Nike site built in the Angeles National Forest, and served as a precedent for subsequent Nike site building programs. Mt. Gleason was in operation from 1955 to 1974, the longest duration of any of the sites investigated. As such, the base was active throughout almost all of the Nike period, and experienced the full historical range of Nike development, including conversion from the Ajax to the nuclear capable Hercules missile. Mt. Gleason is the highest Nike base in the world and thus exhibits a rather unusual design with very steeply pitched roofs to prevent damage from periodic heavy snowfall. The site also retains a high degree of integrity.

LOS PINETOS

Los Pinetos is unique among known recorded Nike sites in the Los Angeles area in that the launch, administrative and battery control facilities are located within a single line-of-sight. This is also an unusual feature of Nike bases nationwide, because the battery control facilities were generally located in an area remote from the others. As a result, Los Pinetos presents a powerful visual representation of what an operative Nike site was, within a single line-of-sight. In addition, the site is the most intact of all of those investigated for this study. In particular, the underground storage magazines have not been vandalized and some original equipment remains.

BARLEY FLATS

The Barley Flats site was in operation from 1956 to 1961, the shortest duration of any in the Angeles National Forest. As a result, it was not associated with the full range of Nike missile development. Due to the site's elevation the buildings do have "snow roofs" similar to those at Mt. Gleason, but they are not the first example of their type.

MAGIC MOUNTAIN/LANG

The integrity of the Magic Mountain/Lang site has been heavily impacted by new construction, demolition, vandalism, and by removal of the battery control facility in 1961. The site was operative from 1957 to 1969 and did experience the full range of Nike development. Magic Mountain/Lang also had the largest administrative and

facilities areas of any recorded installation, and was used as a battalion headquarters from 1964 to 1969. It does not, however, exhibit any unique architectural or planning features.

ACKNOWLEDGEMENTS

The complexity of a project of this scope required the assistance and cooperation of a number of individuals and agencies. First, we wish to express our appreciation to Dr. Patricia Martz, Ms. Nancy Farrell, and Dr. Nedenia Kennedy for their valuable assistance in arranging access to difficult-to-obtain records and for their patience and guidance during the study. We also wish to thank Mr. Mike McIntyre of the U.S. Forest Service, Department of Agriculture for his assistance in coordinating access to the Angeles National Forest and for his comments on an earlier version of this report. Finally, we wish to thank Mr. Michael Binder for his comments on an earlier version of this report and for providing additional information.

A number of individuals representing several agencies provided copies of documents, access to documents, or background information on the Nike missile system. These people and their respective agencies are listed below:

Dr. John Greenwood - Center for Military History, Washington, D.C.

Dr. Charles Hendriks - Center for Military History, Washington, D.C.

Mr. John Slonaker - Chief, Historical Reference Branch, U. S. Army Military History Institute, Carlisle Barracks, PA

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APPENDIX

SECTION I

INTRODUCTION

PROJECT SITE DESCRIPTION

The Mt. Gleason (LA-4), Barley Flats (LA-09), Los Pinetos (LA-94), and Magic Mountain/Lang (LA-98 C and L) Nike installations are located within the boundaries of the Angeles National Forest (Figure 1). These sites were built in a variety of configurations, designed in differing utilitarian architectural styles, and vary widely in condition and integrity. The sites were constructed during the period extending from 1954 to 1957. The first sites were deactivated in 1961 and the last in 1974.

Mt. Gleason (LA-04)

Access to the Mt. Gleason facility and launch pad is gained along a narrow two lane road six miles from the Angeles Forest Highway summit (Figure 2). The launch pad itself is located along a south to north access. It is on a prominent knoll and the site slopes upwards from south to north. The launch area is comprised of three missile storage facilities with associated launch pads, access areas and ground electrical units. Each pad has a double elevator door opening with a variety of launch units extending both left and right of the elevator. Each section also has several ventilator shafts and a single double door main entry with a single personnel escape hatch and a magazine hatch. Each of the major entries are covered by heavy metal doors which have counterweights for ease of opening and closure. The architecture of the base is strictly utilitarian, and includes both concrete block, and woodframe construction. It is interesting, however, that the roofs at this particular site are steeply sloped in order to prevent snow build-up during the winter months.

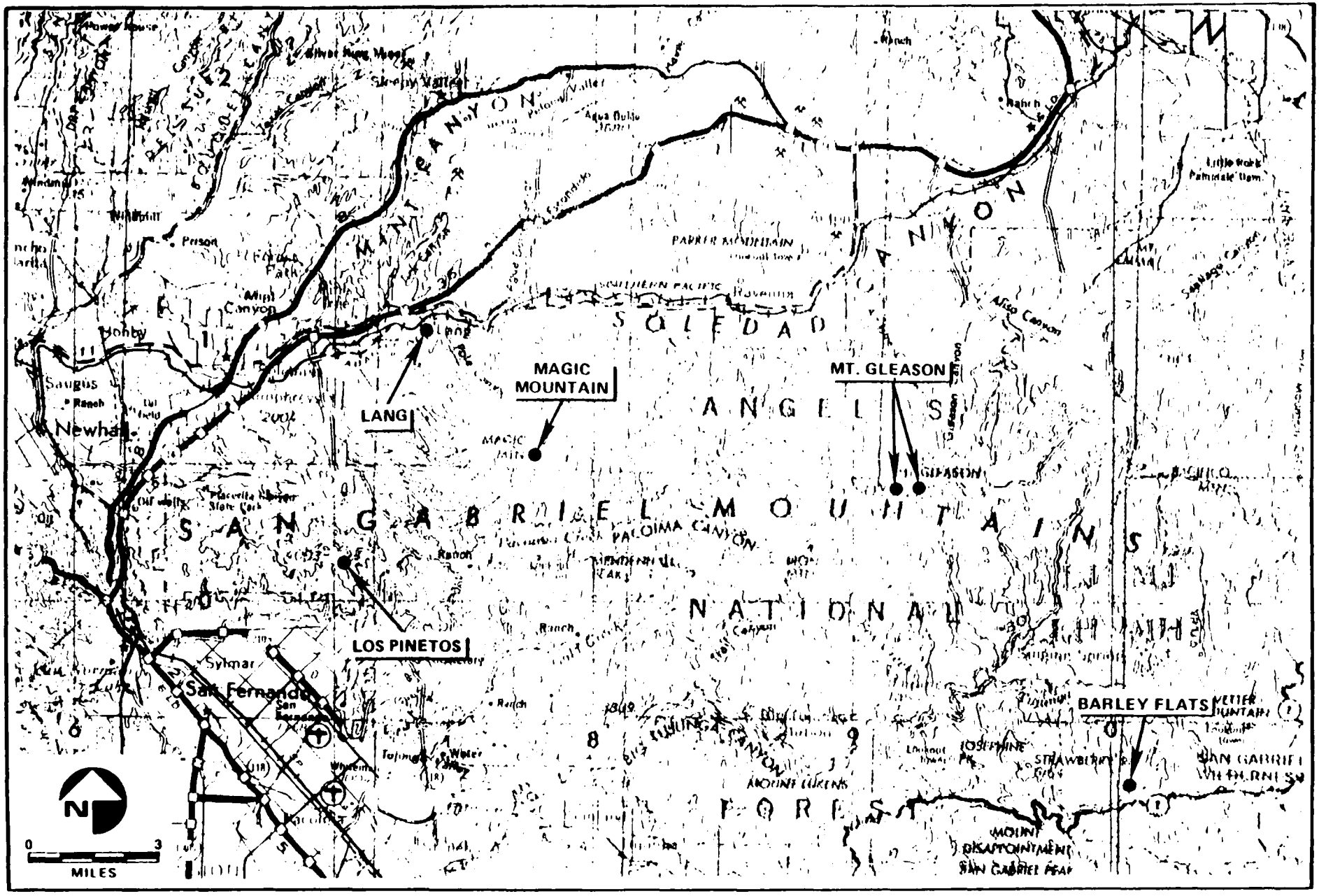
Built in 1954-1955, the Mt. Gleason administration and launch areas are substantially intact. The radar observation site is located approximately 1.5 miles west of the launch site and housing complex compound. The site consists of a concrete/metal platform with two associated water tanks and a block house. Other original structures, which included a barracks and associated support structures, have been demolished.

The site operated continuously from 1955 to 1974. The only alteration to the site took place during conversion from Ajax to Hercules missiles. These changes were minor, and involved the construction of dog kennels and some support buildings. Mt. Gleason is presently utilized as a correctional facility.

Barley Flats (LA-09)

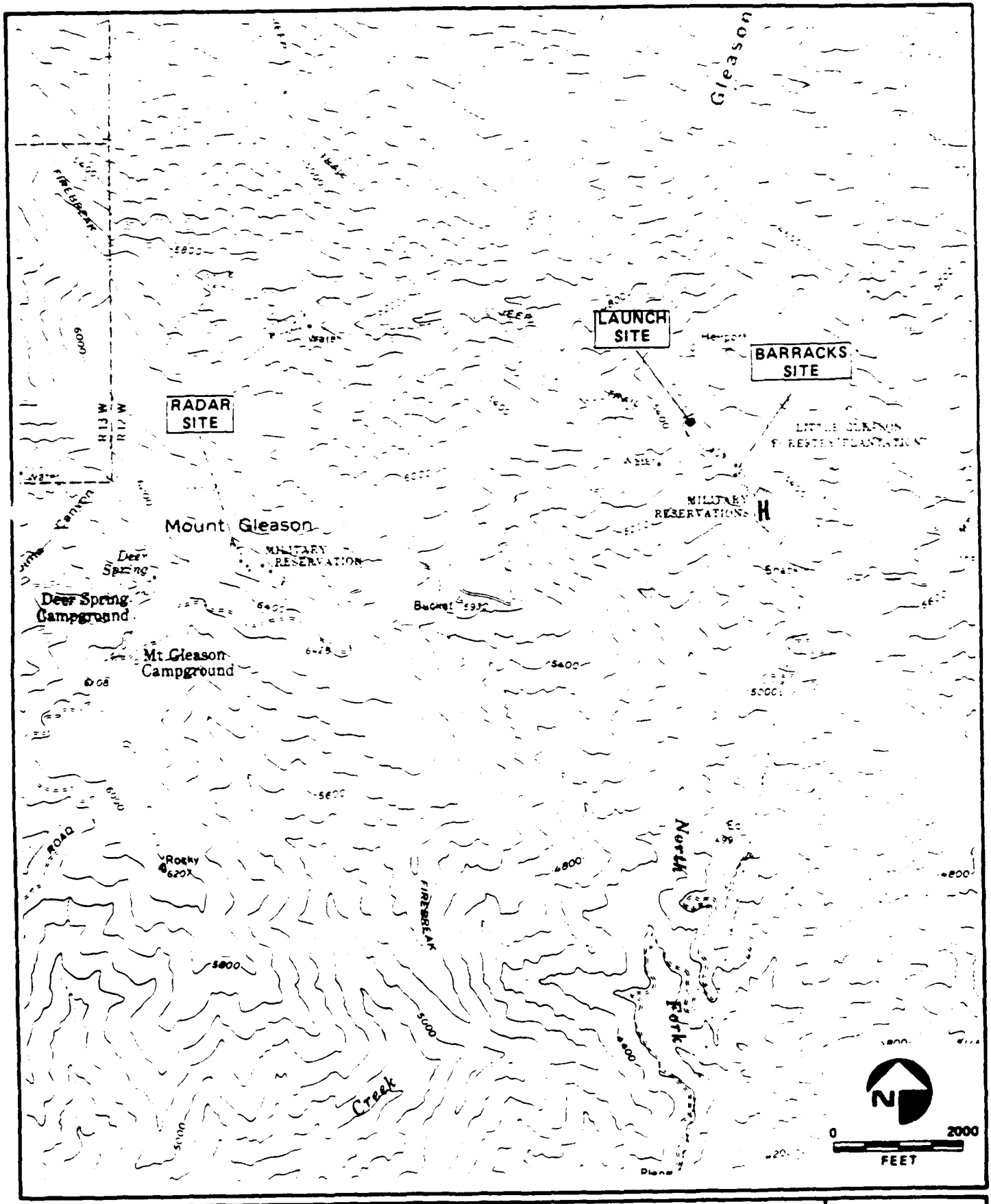
The Barley Flats Nike site is located on top of a high mountain ridge. Access is gained by a narrow, winding, paved road, approximately 2 miles in length, which joins the Angeles Crest Highway in Sec. 9, T2N, R11W (Figure 3).

The site was built in three components: 1) the missile launch site, 2) a barracks and administrative area, and 3) a control area. Due to present use of the barracks area by the L.A. County Correctional Department, site access is now restricted. The associated structures appear to be similar to buildings at the Mt. Gleason facility, which were constructed of concrete block with high pitched roofs. The missile launch



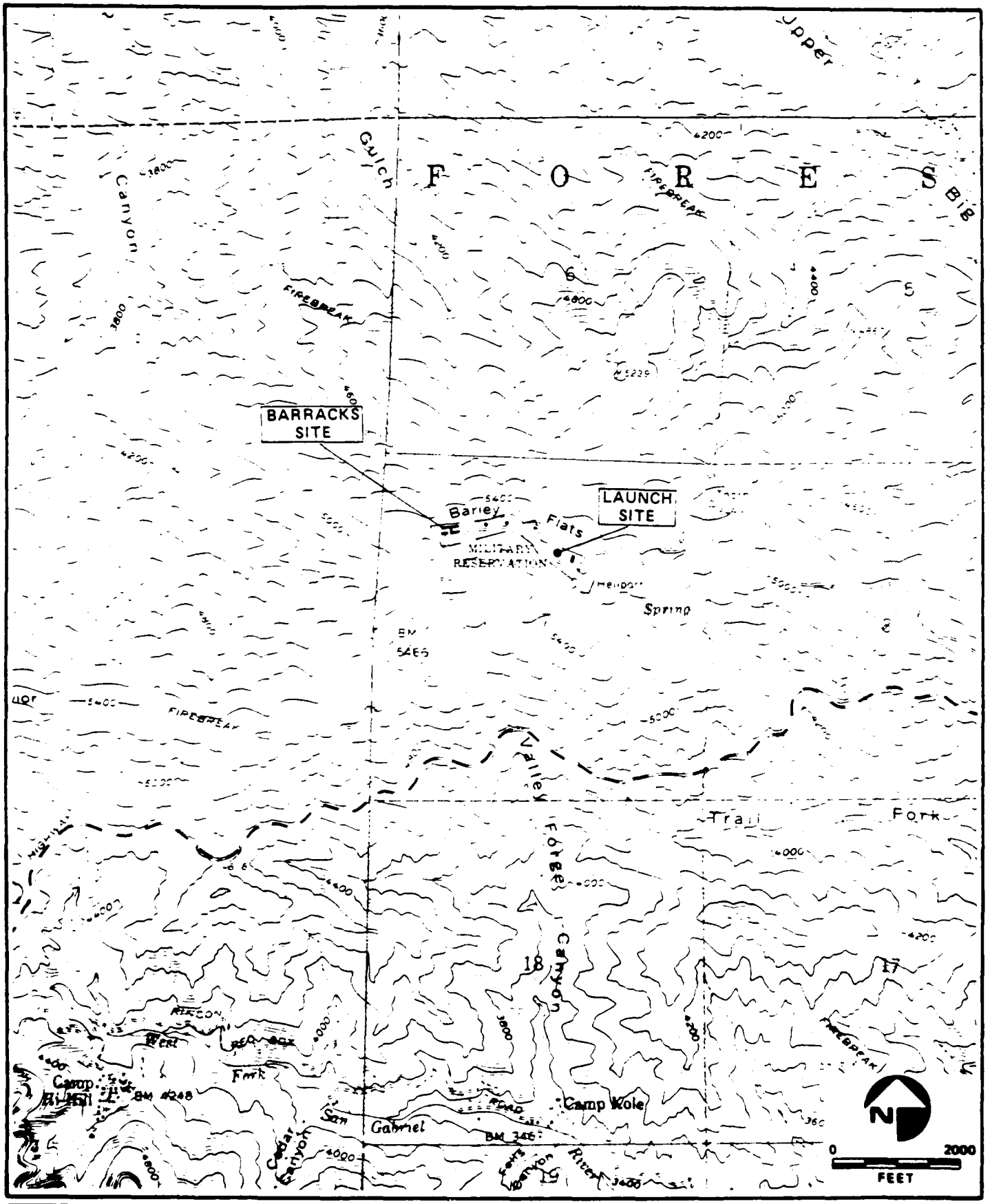
Nike Site Locations
Angeles National Forest
Los Angeles County

FIGURE 1



Mount Gleason Nike Site
Angeles National Forest
Los Angeles County

FIGURE 2



Barley Flats Nike Site
Angeles National Forest
Los Angeles County

FIGURE 3

site is similar in configuration to other Nike bases, consisting of three sections located on a small plateau on the highest point of the ridge. Concrete block structures have been built over the ventilation and access hatches.

The site was built in 1955-1956 and was deactivated in 1961 because it was considered unsuitable for conversion from Ajax to Hercules missiles. The site appears to retain a high degree of architectural integrity although, as noted earlier, access to the administrative and barracks areas was not permitted for the purpose of this investigation. Mt. Disappointment, the control area, was not a part of the present project and is reported to have been demolished.

Los Pinetos (LA-94 C&L)

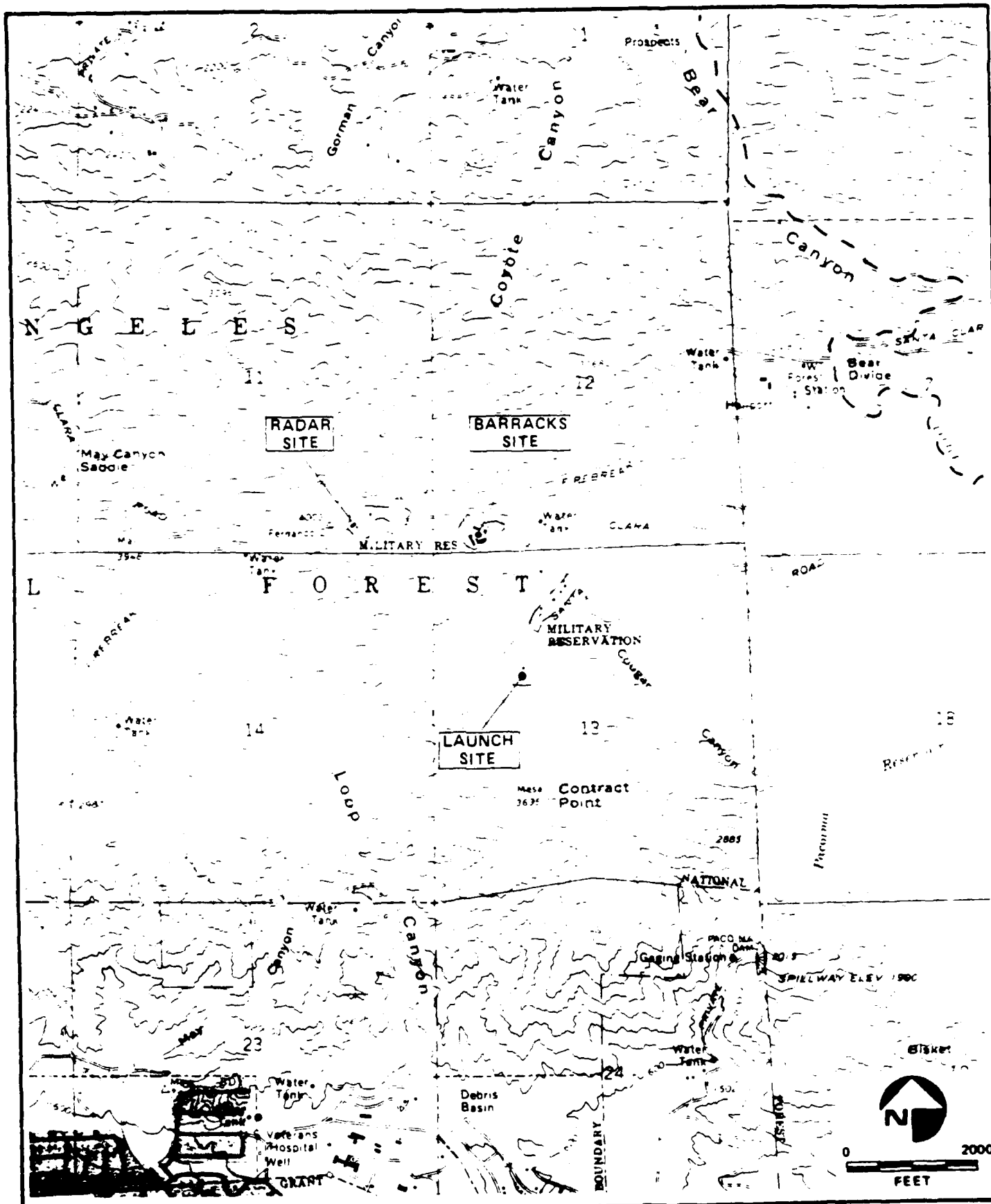
Access to the Los Pinetos Nike Base site is gained by Clara Road; a narrow winding paved roadway. The site (Figure 4) consists of three components: 1) missile launching site, 2) barracks and support structures, and 3) a radar facility. The barracks-housing is located on a low point between the launch pad site and the observation area which are located on plateaus along a ridge extending east to west. The barracks complex consists of an office unit, fire station, heli-pads and dormitories. They are constructed of concrete block with either shed or shallow pitched roofs. These structures have been trimmed with flagstone and cobble rockwork, which are recent alterations.

The radar facility is located on a plateau at the far western end of the complex. It consists of several concrete block structures and a metal grate heli-pad, as well as several radar dome platforms. One platform appears to be intact and is now in use as a microwave telephone receiving station.

The launch site is located on a plateau on the extreme eastern end of the site complex. There are three batteries at the launch facility. They are similar in configuration to those located at Magic Mountain/Lang and Mt. Gleason, with large rectangular elevator/silo doors, and twin door personnel access with associated escape hatches and ventilators. The missile storage and launch pads are constructed of poured concrete with asphalt pavement covering the remaining area. The associated guard house and support structures are built of concrete block. The launch site at Los Pinetos is unique in that each of the three battery units is largely intact. Unit C is particularly complete with bunks and auxiliary equipment still in place including gas filters, ventilators, electrical machinery, fire equipment, and signage. The overall integrity of Los Pinetos is excellent. The majority of the original structures remain standing and the launch and radar facilities are in an excellent state of preservation. The installation was built in 1955-1956 and was deactivated in 1968. The only military alterations at the site took place when it was converted from Ajax to Hercules missiles (Figure 4).

Magic Mountain/Lang (LA-98 C&L)

Access to the Magic Mountain Nike Site (LA-98-C) is gained by a narrow two lane paved road. The site is located on a rather barren mountain top and consists of two major and one minor components including: 1) a radar observation area, now occupied by a new microwave tower, 2) barracks and a probable command office, and 3) a smaller radar or electrical area located on a hill to the east of the complex. The site has no visible standing architecture, relating to the Nike period, with the exception of two



Los Pinetos Nike Site
Angeles National Forest
Los Angeles County

FIGURE 4

large water tanks. The Magic Mountain Nike site has not retained its architectural integrity due to demolition and vandalism. The site was built in 1956-1957 and was deactivated in 1961 (Figure 5).

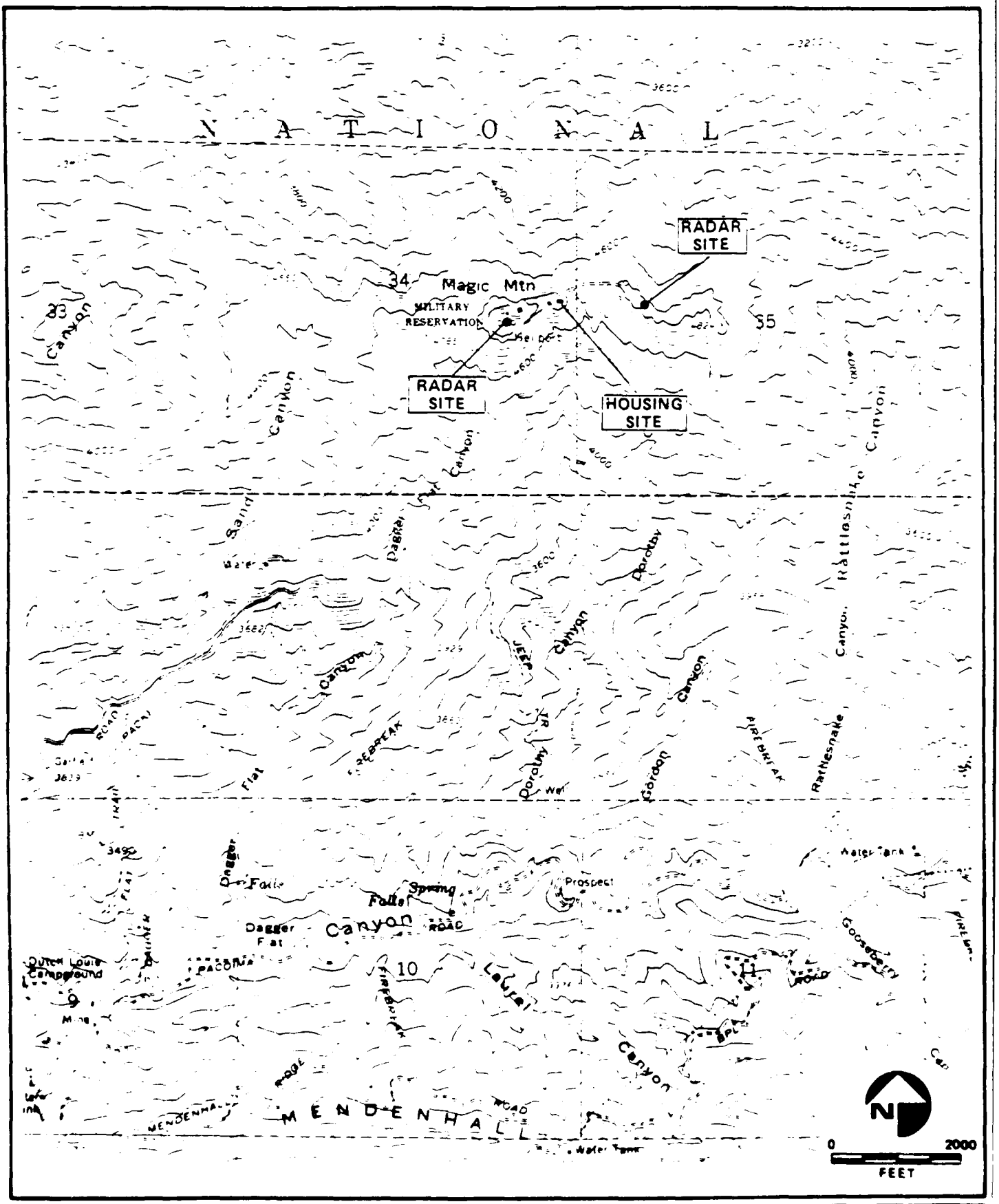
Lang Station Nike site (LA-98-L) is located in Soledad Canyon on the southern bank of the Santa Clara River. Access is gained by a small two lane road that connects to Highway 14. Site integrity has been severely impacted by recent construction, including the addition of concrete block walls, new structures, and by vandalism. The site exists in three components: 1) the missile launch facility, 2) a barracks area, and 3) a command station with numerous associated buildings, and exercise facilities. Many structures are built of concrete block and the launch silos and launch pads are of reinforced poured concrete. The Lang Station Nike site was in use from 1957 to 1969 (Figure 6).

PURPOSE

The following document was prepared in accordance with published federal guidelines relating to the eligibility of cultural resources to the National Register of Historic Places. In summary, to determine site significance through application of National Register criteria, several levels of potential significance which reflect different (although not necessarily mutually exclusive) values must be considered. These criteria are provided in 36 CFR 60.6 and 36 CFR 64:

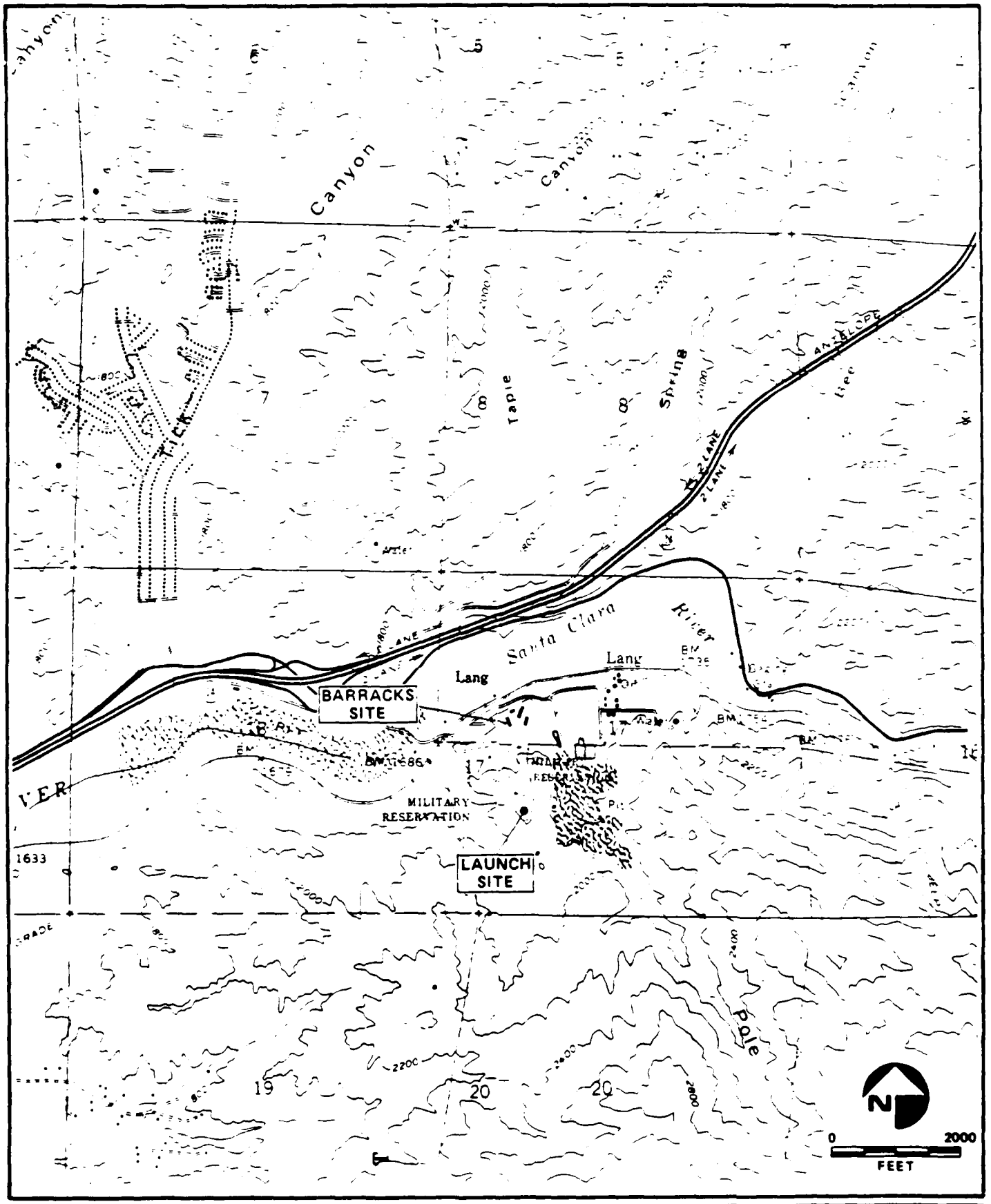
> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of *location, design, setting, materials,* workmanship, feeling, and association, and
>
> (a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) That are associated with the lives of persons significant in our past; or
>
> (c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) That have yielded, or may be likely to yield, information important in prehistory or history.

Under criterion (d), virtually all sites are potentially eligible for inclusion in the National Register of Historic Places. However, to use criterion (d) in a blanket manner serves neither the evaluator nor the manager who relies on evaluation expertise to protect cultural resources. Site significance under criterion (d) should infer that



Magic Mountain Nike Site
Angeles National Forest
Los Angeles County

FIGURE 5



Lang Nike Site
Angeles National Forest
Los Angeles County

FIGURE 6

substantive research potential is present and therefore that the data from a specific site or locality can significantly enhance the body of knowledge we presently possess. Guidelines used in this study to assess site significance include 36 CFR 60.6, 36 CFR 63, and Guidelines for Level of Documentation...National Register (Federal Register 1977).

In addition, the properties under investigation are less than fifty years old. Initial construction occurred at the sites from 1954 to 1956 and they were operational between 1955 to 1957. As such, the properties would qualify as eligible only if they are of "exceptional importance." Specifically, a property within this time period must qualify under one or more of the following guidelines as outlined in the 1979 Department of the Interior Guidelines on How to Evaluate and Nominate Potential National Register Properties that have Achieved Significance with the Last 50 Years.

1. A property that has achieved significance within the last fifty years can be evaluated only when sufficient historical perspective exists to determine that the property is exceptionally important and will continue to retain that distinction in the future.

2. The phrase "exceptional importance" may be applied to the extraordinary importance of an event or to an entire category of resources so fragile that survivors of any age are unusual.

3. The phrase "exceptional importance" does not necessarily mean national significance. It is a measure of a property's significance within the appropriate geographical context, whether that context is local, state, or national.

Finally, a property must be considered as "historically" important, and not as a factor of any contemporary use. The passage of some time is, therefore, necessary to establish the ultimate significance of a site less than fifty years old. In relation to the Angeles Forest Nike sites, it is clear that this has happened as the Nike system, America's first missle defense network, is now an undeniable and significant part of American military history.

METHOD OF DATA COLLECTION

All work proceeded in a systematic manner including a field study, archival research, and preparation of a technical report. Several problems were encountered during the archival research portion of the study, which are briefly summarized at the end of the archival methods section.

Field Study

The field study involved the photography and on-site inspection of each of the individual Nike installations. All buildings and features were identified on site maps when they were found to be available. The only structures not inspected as part of the field study were the barracks and administrative facilities at Barley Flats (LA-09) and Mt. Gleason (LA-04). Access to these areas was prohibited due to their present use as correctional facilities.

Archival Research

The archival research portion of the study depended almost entirely on four major sources of information.

1) Archives: U.S. Army Military History Institute, Carlisle, Pennsylvania.

2) Archives: Center for Military History, Washington, D.C.

3) Archives/Property Records: U.S. Army Corps of Engineers, Los Angeles District, California.

4) Archives: Engineering and University Research Library UCLA, Los Angeles, California.

The majority of research conducted was primary in nature because there are no published sources that relate the development of the Nike system to the Los Angeles Defense Area. Indeed, there are few publications that deal comprehensively with the development of the Nike system nationwide. One source, an "Historical Overview of the Nike Missile System," prepared by Environmental Science and Engineering, Inc. in September 1983, did provide solid background information. Much of this report's information relating to individual battalions, however, was incomplete or inaccurate.

Establishing the battalion histories or chains of command at individual Nike installations is crucial to conducting meaningful detailed archival investigation and in particular, when conducting newspaper research. Quite simply, the majority of newspaper references contained in ARADCOM Argus, the Army newspaper published from 1956 to the closure of ARADCOM, refer to the battalion and rarely to the site location or battery identification number. The Argus is one of the best detailed sources of information on region, brigade, or battalion level histories. Without first identifying the battalion and military group designations it is extremely difficult to conduct Nike research relative to a site-specific battery. Unfortunately, these identification numbers were not obtained from station lists until late in the research process. This was largely the result of several postponed trips to Washington and Pennsylvania. Although the information was ultimately obtained, it did delay production of this report.

The second major problem encountered during the research process is one specific to Nike research. Much of the material relating to Nike sites was prepared by the U.S. Government or U.S. Army, and much of it remains classified. Therefore, this information is unavailable for public circulation in an environmental report even if access to it was gained.

A third problem of archival research is that much of the material, and particularly that relating to construction and maintenance, has been stored and for all practical purposes lost. A request was made through the Corps of Engineers Office to the Federal Records Center, Laguna Niguel, regarding Nike material with specific box number references. The boxes were sent, but only a fraction of the material in the boxes related to Nike bases, despite the fact that according to access lists in the Corps offices, the material should have been there. Archives at Suitland, Maryland proved equally unhelpful. Real estate records in the Corps of Engineers Office, Los Angeles, proved to be one of the best sources of information. Disposal records (1505) were

particularly useful as they generally contained information relating to land acquisition and construction.

In summary, it is suggested that future research regarding individual Nike bases be conducted as follows:

1) Review "U.S. Army Station lists" and "ARADCOM Annual Historical Summaries" to determine the period, command, and unit occupancy of each site. Station lists and ARADCOM reports are available at the Center for Military History, Washington, D.C.

2) The Army Lineage Series for Air Defense Artillery, compiled by Janice E. McKenney and published in 1985, is also an excellent source of information. There are, however, occasional discrepancies between this document and station lists. It is, therefore, suggested that both sources be consulted to determine the final occupation history of each site.

3) Review the ARADCOM Argus to develop information unavailable from any other source relating to brigade, battalion, and site-specific histories.

4) Investigate real estate records in Corps of Engineers' division or district offices with particular attention to disposal records.

5) Conduct general research relating to missile development and the Nike system in public libraries.

Following completion of the field and archival portions of the study, a technical report was prepared that reviewed broad historical developments relevant to the Nike system but focused on those relating to Angeles Forest Nike sites. Ultimately, the information gathered proved sufficient to make a determination of eligibility for each of these sites.

In a technical report of this kind it is often necessary to use acronyms which identify specific organizations. The following list of acronyms is provided to aid the reader in understanding this form of abreviation.

ACRONYMS

AAA	Antiaircraft Artillery
AA	Antiaircraft
AADCP	Army Air Defense Command Post
AD	Air Defense
ARAACOM	Army Antiaircraft Command
ARADCOM	Army Air Defense Command
ARNG	Army National Guard
CONAD	Continental Air Defense Command
CONUS	Continental United States
GAPA	Ground to Air Pilotless Aircraft
HIPAR	High Power Acquisition Radar

LADA	Los Angeles Defense Area
NORAD	North American Air Defense Command
TOE	Table of Organization and Equipment

SECTION II

THE DEVELOPMENT AND DEPLOYMENT OF THE NIKE MISSILE

HISTORICAL BACKGROUND

American military interest in guided missiles dates to 1940, when the Air Force established a "guided missile" program which utilized glide-bombs launched from aircraft and guided to surface targets. A second generation glide-bomb was the "bat" which also began as an Air Force project but was eventually transferred to the Navy. This missile system was of particular interest, because radar was employed to lock a "bat" onto its target.

In 1943, the Army established its own Rocket Branch known as the Technical Division of the Office, Chief of Ordnance. The goal of this organization was to bring further development of the guided missile under more central management. In May 1944, the Army placed a contract with JPL for investigation of the feasibility and future uses of guided missiles.

By contrast, Germany had worked on nearly 150 guided missile projects by the end of WW II. Many of these projects were related to antiaircraft surface-to-air missiles, and were a direct result of the increasing impact of allied bombing on German home territory. The most successful of the German projects were the "Enzian" (Gentian), "Schmetterling" (Butterfly), "Reintochter" (Daughter of the Rhine), and "Wasserfall" (Waterfall). Fortunately, these projects progressed little beyond the testing stage or they might have seriously hindered the allied war effort.

Despite the fact that surface-to-air guided missiles had never become a serious operational weapon, the implications of their development were clear. Using German technology with British radar, and the United States' nuclear device, a single country could virtually dominate any form of armed conflict. In effect, the race was on to develop all forms of both long- and short-range guided missiles.

In February 1945, the Army contracted with Bell Telephone Laboratories and the Western Electric Company to investigate an air-defense program. This was the beginning of what would become the Nike program. The Army had earlier established, with some foresight, the White Sands Proving Ground in New Mexico, and it was here that much of the original testing of the Nike was carried out. Nike, however, was only one of a number of missiles being tested by the Army. In addition, the Air Force and the Navy were running separate and highly competitive programs.

As early as 1945, for example, Boeing was developing a ground to air pilotless aircraft (GAPA) under an Air Force contract. This was actually a highly advanced ramjet powered missile. In 1949, however, a high-level decision was made to force the Air Force to cancel its short-range antiaircraft missile program. In response one Boeing engineer remarked:

> "We were somewhat ahead of this missile in development at the time of cancellation. We had even developed our own ramjet power plants for this particular bird. We were making terrific progress,

> and had a weapon that could soon have been placed in operation. Then someone screamed that the Army was being crowded by our works and blooey!- just like that, the whole thing was canceled." (Caidin 1958:238)

The decision was clearly political. One clue as to why the decision was made is that General Omar Bradley, Chairman of the Joint Chiefs of Staff, had determined that each branch of the armed services would conduct missile development according to its assigned mission. The Army was assigned the mission of manning antiaircraft (gun) artillery emplacements.

The Army's overall missile program was, however, in a state of disarray. In retrospect, therefore, it is perhaps unfortunate that the Air Force was ordered to cancel its program.

> It was evident that after its excellent start, the Army's postwar missile program was foundering in a morass of financial want and procrastination. The Army had almost abandoned the entire Project Hermes. It had picked up the LaCrosse (tactical) missile program from the Navy, and had some other tactical missile irons in the fire. Its only major projects were the Corporal missile and a new ballistic missile, the proposed Redstone. (Caidin 1958:238)

Due to these financial woes, which were shared by other branches of the armed services, the country's missile program languished. This continued until July of 1950, when the opening shots were fired in Korea. The spectre of war shook the American people and, in particular, politicians and the military command. As a result money quickly became of less concern in relation to maintaining a state of military readiness.

> A succinct example of the change of attitude can be seen in the missile budget. From 1945 to 1950, the missile program in this country averaged about $70 million a year, gradually creeping up to $135 million by 1950. The first year of Korea saw $800 million spent on missiles, and the second more than $1 billion. (Parson 1962:38)

Again, as a result of the Korean War, the Secretary of Defense, George C. Marshall, Army Chief of Staff during WW II, created the position of Director of Guided Missiles as part of his office. A number of missile programs were immediately funded, and they each became operative within a few years. As an article in the Argus notes, the general guidelines for the development of the Nike system were as follows:

> Contracts were let and the Nike System (Nike, the Winged Goddess of Victory of Greek mythology) was begun.

> From the outset, the Nike project had some specific objectives. Nike would have these characteristics:
>
> o Supersonic speed and rocket power free of dependence on this atmosphere for its supply of oxygen.
>
> o Ground-based guidance equipment which would not be expended each time a missile was fired.
>
> o A warhead of sufficient power to destroy its target without scoring a direct hit.
>
> o Self-sufficient capabilities for covering the range of the air battle, if necessary, from detection through destruction of enemy targets.
>
> o An open-end design — that is, a system capable of accommodating improvements economically with the least obsolescense of existing components. (Argus: June 1964, p.2)

The first of this series developed was the Nike I, later renamed the Nike-Ajax. By 1951, the first successful surface-to-air interception of an aircraft by a guided missile was accomplished. In 1953, the first prototype battery was tested at White Sands Proving Ground, and in March of 1954 the first combat operative Nike unit became operative in the Washington area. The Nike quickly became the most important part of the Army missile program, both in terms of finance and responsibility (see Figure 7).

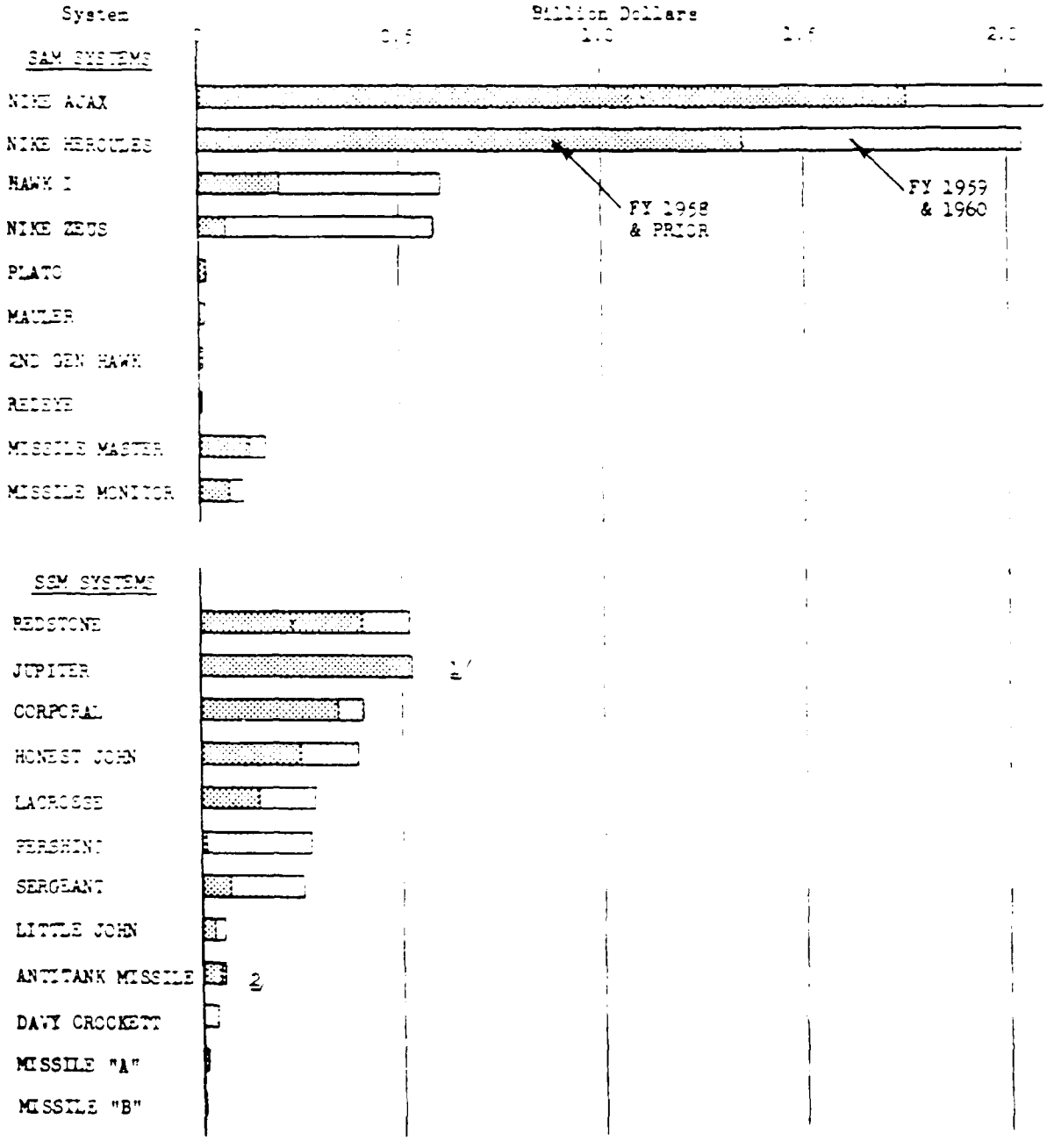
THE LOS ANGELES DEFENSE AREA DEPLOYMENT

In Los Angeles, the Department of the Army had directed, as early as December 1951 (letter, AGAO-S 381, December 1951), that future sites be located under the subject heading "AAA Defense Area and Projects Definitions." At this point in time, the investigation was ordered to proceed under strict security. On May 6, 1952, these guidelines were somewhat relaxed. A letter from General Bush, to the Commanding Generals (AGAO-S, 2 May 1952) notes:

> 2. Paragraphs 3a and c are modified to effect a downgrading of the classification of AAA projects to permit competitive bidding on the construction of the projects. Individual projects or groups of projects not exceeding six need not be classified. However, all correspondence and documents containing seven or more projects in any one defense area will be classified RESTRICTED SECURITY INFORMATION.

By July 1952, the "siting team" in the Los Angeles area had gathered considerable information on the location of future Nike sites. L.B. Otterness, Chief of the Appraisal

ESTIMATED DIRECT OBLIGATIONS FOR U.S. ARMY MISSILE SYSTEMS



1/ Funding beyond FY 1958 by USAF.
2/ FY 1960 data not available.

Program Costs

FIGURE 7

Branch, U.S. Army Corps of Engineers, Los Angeles District, placed a "memorandum for file," in response to a telephone inquiry from William Shawler, Sixth Army. He noted:

> I informed Mr. Shawler that:
>
> a. The Siting Team, while in Los Angeles, had tentatively selected between 50 and 60 sites under the defense plan for Los Angeles.
>
> b. Although only 12 sites are being considered for operation at this time, each site requires alternates in the event complications arise at main sites selected, and for that reason the Siting Team had requested that rights of entry be obtained on the total number selected by the team.
>
> c. Information furnished by the Siting Team only pin-pointed the locations on a large map, and ownership data and address of owner had to be obtained prior to requesting Acquisition to contact owners for necessary rights of entry.
>
> d. Ownership data has been obtained on approximately one-half of the sites. This data is being shown on smaller plats and will be furnished Acquisition as soon as copies are run on individual sites.
>
> e. I quoted Message No. 63, dated 5 July, received from Commanding General, 47th AAA Brigade. Fort Baker, requesting information on progress made in procuring right of entry for the radar testing on 12 sites in Los Angeles.
>
> f. As soon as rights of entry on 6 sites have been obtained the AAA Brigade at Fort Baker will be notified. (SPLRH 601: 7 July 1952)

Efforts to acquire sites proceeded with all possible speed. However, the Corps of Engineers did experience some difficulty. This is evidenced in a letter from Col. Shuler, Corps of Engineers, Los Angeles District, to Col. Gerald Gibbs, Commanding Officer, 47th AAA Brigade at Fort MacArthur, Shuler writes:

> Enclosed is a newspaper clipping from the Santa Monica "Outlook" dated 12 January 1953 which I desire to bring to your attention. You will appreciate, I am sure, that publicity of this nature adds greatly to the already difficult problem of obtaining real estate in the Los Angeles area for your project. Since none of my officers made the statement, it appears to me that perhaps one of yours may be involved. If so, I would appreciate it

> if in the future that releases of this type be carefully screened to avoid issuance of any information which tends to unnecessarily alarm the property owners.
>
> Along the same line, it has been reported to me that in connection with the negotiations with the City of South Gate, one of your officers made a remark which the city officials evidently construed to mean that another site would do just as well as the park site. It is felt that this remark had a great deal to do with stiffening the opposition of the council members to leasing part of the park for your purposes. I feel that the Los Angeles District must take an unequivocal position in dealing with property owners, such position to be based on your statement that a certain property is required for defense purposes. Any statements to the contrary which reach the people with whom we are negotiating makes our job the more difficult.

In brief, the Corps of Engineers was aware of the difficulty of "selling" the Nike missile to the public, and wanted no interference from Army Command.

In October of 1953, real estate negotiations were temporarily suspended. The reason for this is not clear, but the delay was extremely short-lived. A letter dated November 12, 1953 notes:

> 1. Reference is made to Teletype ENGLP 4187, dated 28 October 1953, directing the suspension of all real estate action on the NIKE program. This teletype is hereby rescinded and all real estate action is to be resumed immediately, consistent with the instructions set forth hereinafter. In this regard, informal information has been received from the Office of the Assistant Chief of Staff, G4, to the effect that Real Estate Planning Reports will continue to be processed and Real Estate Directives will continue to be issued based upon Real Estate Planning Reports in their present form without awaiting acreage and money revisions which will result from instructions set forth below. (Gol. 1 Nike:12 November 1953)

Acquisition and construction proceeded both immediately and simultaneously and in 1954 the first Los Angeles Defense area system Nike Battery became operative in Chatsworth.

The siting teams of the Corps of Engineers operated under strictly defined and, at the time, classified guidelines. These guidelines were later reflected in all real estate and planning reports. Specific information requested by these guidelines included the minimum acreage, soils and typography, foundation conditions, utilities, availability of

water and electrical supply, access, and communications conditions. (Please see Appendix A for the entire set of guidelines.)

THE MISSILES

The Nike system was the backbone of American missile antiaircraft defense, from 1954 to the late 1960's. It encompassed the initial deployment of the Nike-Ajax (originally Nike I), followed by the Sam-A-7, and eventually the Nike-Hercules (Sam-A-25). The designation of these missiles as (Sam) is an acronym for Surface to Air Missile.

Nike-Ajax

The Ajax was the first in the Army's family of guided missiles. In addition, it was the first operational, supersonic United States missile. It was essentially designed to replace the 90-mm and 120-mm guns that had been operational throughout WW II. It was guided by a radar control system, and although it was outdated soon after its deployment, it can be regarded as the pioneering member of the American surface-to-air missile family.

SPECIFICATIONS AND DATA

Manufacturers:	PRIME CONTRACTOR, Western Electric AIRFRAME, Douglas POWER PLANT, Aerojet-General (General Tire) BOOSTER, Bell Aircraft GUIDANCE SYSTEM, Bell Telephone Laboratories
Type:	Antiaircraft Rocket
Dimensions:	LENGTH, 21 feet (with booster, 34 feet) DIAMETER, 12 inches WEIGHT, 1000 pounds SPAN, 4 feet 6 inches
Guidance:	COMMAND; Radar Beam Rider
Power Plant:	SUSTAINER, Liquid-propellant rocket BOOSTER, Solid-propellant rocket
Performance:	SPEED, Mach 2 (1476 mph) RANGE, 25 to 30 miles CEILING, 65,000 feet
Armament:	High Explosive

Nike-Hercules

The Hercules was the second generation in the Army's guided missile system. This system was first deployed in 1958, and represented a major advance over the Ajax because it was nuclear capable. Unlike the Ajax, the Hercules utilized solid fuel for booster and sustainer. It was also faster and could reach a higher altitude. Eventually it entirely replaced the Ajax.

SPECIFICATIONS AND DATA

Manufacturers:	PRIME CONTRACTOR, Western Electric AIRFRAME, Douglas POWER PLANT, Thiokol Chemical BOOSTER, Goodyear Aircraft GUIDANCE SYSTEM, Bell Telephone Laboratories
Type:	Antiaircraft Rocket
Dimensions:	LENGTH, 27 feet (with booster, 41.5 feet) DIAMETER, 32 inches WEIGHT, 10,000 pounds with booster SPAN, 9 feet 2 inches
Guidance:	Command; Beam Rider; Semiactive Radar Homing
Power Plant:	SUSTAINER, Solid-propellant rocket BOOSTER, Solid-propellant rockets
Performance:	SPEED, 4,000 mph RANGE, 50 to 75 miles CEILING, 80,000 feet THRUST, 2600 pounds
Armament:	Nuclear/High Explosive

The Nike system was deployed worldwide, and it was for many years the only ground-based antiaircraft defense system in the continental United States. As a result, it was recognized that it would be extremely costly to discard or radically redesign the system. Even before the first Nike-Ajax was deployed it was recognized that the system was overly cumbersome, inefficient, and complicated. The huge underground bunkers radically limited the size of each missile that could be fired. In effect, therefore, any replacement system would have had to be fit into the existing one. Despite these difficulties the Nike program operated at a high degree of combat readiness until its closure in 1975.

SECTION III

AIR DEFENSE ORGANIZATION: THE NIKE PERIOD

During the Nike period, the Unified Action Armed Forces assigned the Army the following air defense functions: to organize, train, and equip Army air defense units, including the provision of Army forces as required for the defense of the United States and in accordance with guidelines established by the Joint Chiefs of Staff. The combined command established for the defense of the continental United States, Canada, and Alaska was the North American Air Defense Command (NORAD). The unified command established to perform national air defense missions was the Continental Air Defense Command (CONAD) (see Figures 8 and 9). The command established to carry out the specific Army defense mission was the United States Army Air Defense Command (ARADCOM). ARADCOM was officially formed on March 21, 1957, as a redesignation of the U.S. Army Antiaircraft Command (ARAACOM) which was formed in 1950.

NORTH AMERICAN AIR DEFENSE COMMAND (NORAD)

NORAD was directly responsible to the United States Joint Chiefs of Staff. It was created in September 1957 and had jurisdiction over United States and Canadian Forces involved in aerospace defense. It was comprised of a number of "component forces" including ARADCOM which operated the Nike system. Each of the component forces provided combat ready air defense units for operational control by NORAD, but the commanders of each component retained command, administration, training, and logistical control over their respective force. NORAD did, however, prepare operation plans, conduct tactical exercises, and coordinate plans and requirements for new air defense weapons.

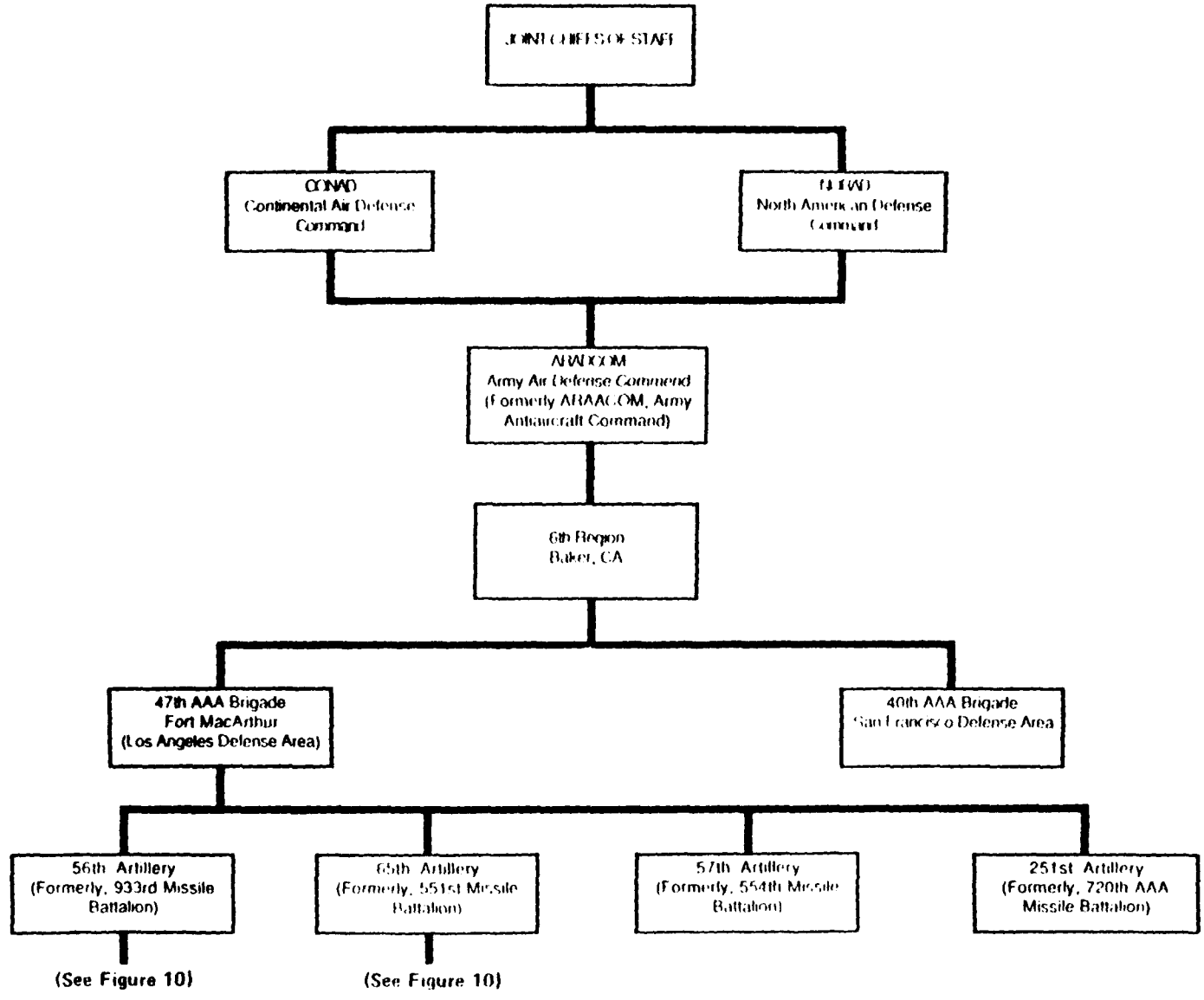
CONTINENTAL AIR DEFENSE (CONAD)

CONAD operated as a unified command under the Joint Chiefs of Staff, and performed all air defense missions of a national nature. CONAD was involved in broad national planning, separate from NORAD, while more detailed planning was accomplished by individual component commands including ARADCOM.

UNITED STATES ARMY AIR DEFENSE COMMAND (ARADCOM)

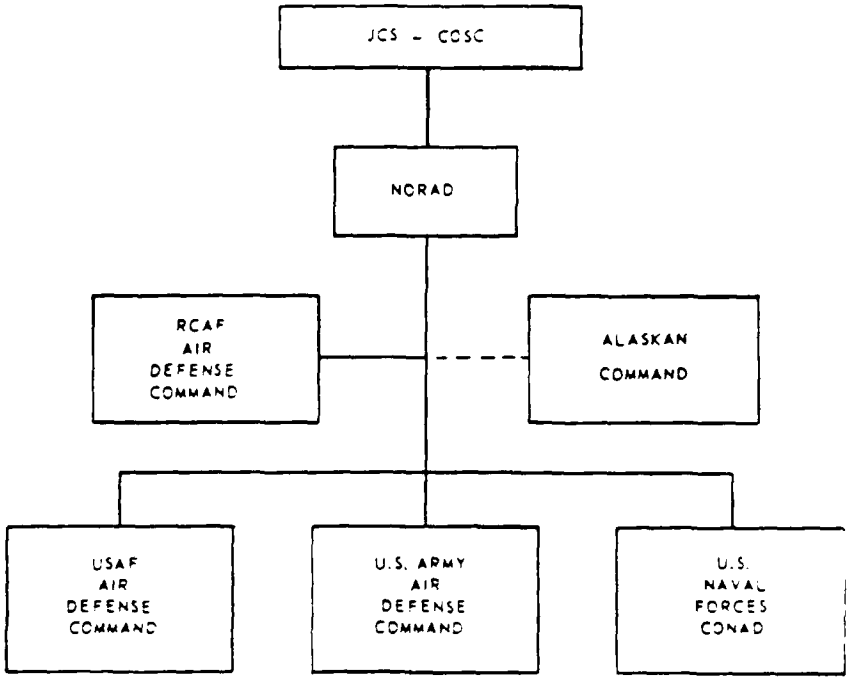
As described in the Field Manual for U.S. Army Air Defense Employment, dated July 1968, ARADCOM duties and responsibilities included the following:

> United States Army Air Defense Command (ARADCOM)
>
> a. The senior U.S. Army organization in the NORAD structure is ARADCOM which commands, trains, and administers the U.S. Army air defense units of NORAD.
>
> b. ARADCOM units defend major industrial and population centers of the United States as

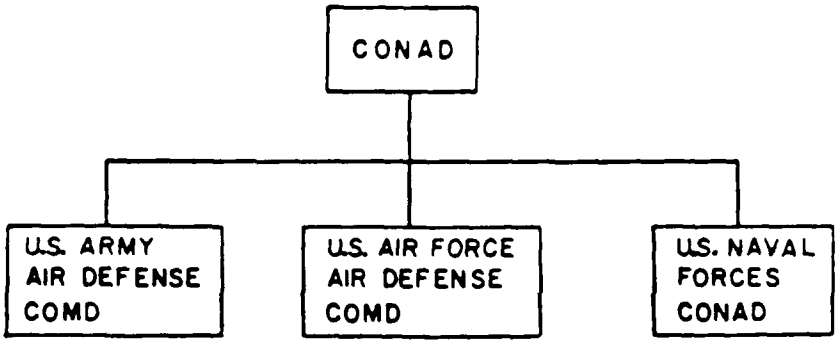


Army Air Defense Command
6th Region

FIGURE 8



NORAD component commands.



CONAD structure.

NORAD Component Commands and CONAD Structure

FIGURE 9

well as selected Strategic Air Command (SAC) bases. NIKE-AJAX and NIKE-HERCULES sites are manned by ARADCOM personnel in CONUS and Greenland. In addition, National Guard units man NIKE-AJAX sites within CONUS.

c. Administrative training supervision over the widespread defenses of ARADCOM is diversified by the establishment of area commands (regions). [The region commanding the Los Angeles defense area was the 6th Region.]

d. Army air defense command posts (AADCP) are established for each defense at battalion, group, or brigade level. From the AADCP the Army air defense commander exercises operational control over all Army fire units within his defense. For normal operations, the AADCP is under operational control of the NORAD Sector Direction Center; however, for command, the AADCP is directly subordinate to the ARADCOM region commander. [The brigade for responsibility for the Los Angeles area was the 47th Brigade.]

Most important was the general Army philosophy which provided the individual unit commanders with wide discretionary powers. Specifically...

e. The Army philosophy of control of AD units is to delegate to the lowest practical level the authority to act, while preserving at the highest practical level the ability to coordinate. The result is maximum reaction to an enemy threat in a minimum of time. For an AD engagement, the fire unit commander is supplied information on which to base his decisions, and he is delegated authority to act. Only infrequently should it be necessary for an AD commander to exercise his authority to override the combat decision of AD commanders at subordinate echelons.

These powers clearly underscore the actual military significance of each Nike site under a single battalion command.

AIR DEFENSE BRIGADE

The 47th Brigade at Fort MacArthur had command of the Nike Los Angeles Defense Area (DA) system through most of its history. The AD brigade consisted of a brigade headquarters and headquarters battery, and all AD groups and battalions that were assigned or attached to it. The mission of the brigade was to provide tactical control and supervision to all AD units within its jurisdictional area. A brigade usually consisted of two or more Air Defense Groups. In the Los Angeles Defense Area, these consisted primarily of the regular Army 56th and 65th Artillery, with elements of the

57th Artillery, 3rd Battalion stationed at White Point, Fort MacArthur. The 57th Artillery group was eventually replaced by an Army National Guard Unit (ARNG).

AIR DEFENSE BATTALION

The battalion was the basic administrative unit of Nike Air Defense. It generally consisted of a headquarters and headquarters battery with several firing batteries. As an administrative unit in the Los Angeles area, the battalion was directly responsible to the brigade headquarters (Figure 10).

AAA MISSILE FIRING BATTERY

The AAA Missile Firing Battery was the base unit that operated at each Nike launch site (Figure 11). It consisted of a headquarters section, communications section, a fire control platoon, a launching platoon, a launching platoon headquarters, and a launching section. Their duties are described in the January 1956 manual "Procedures and Drills for the Nike I System."

a. Headquarters Section. The organization and responsibility of the headquarters section is essentially the same as in AAA gun batteries.

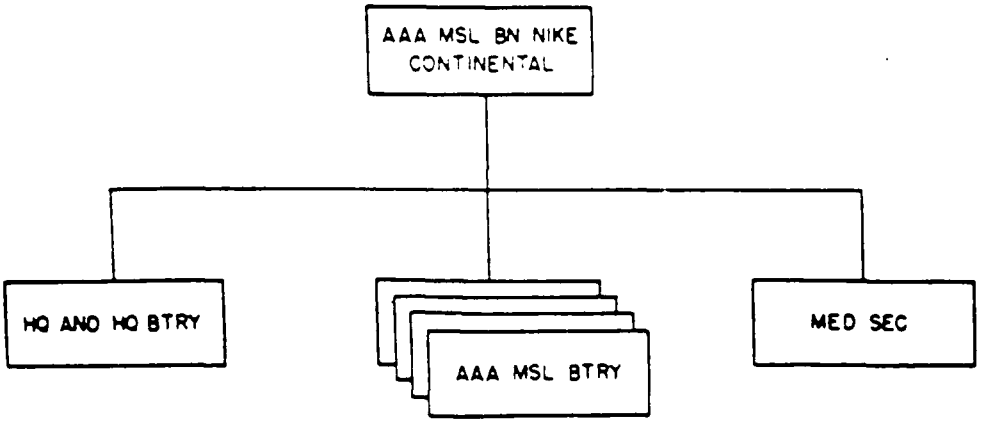
b. Communications Section. This section is responsible for installing and maintaining the noncommercial communication nets, and operating the commercial communication nets within the battery.

c. Fire Control Platoon. The fire control platoon is responsible for the operation and maintenance of the fire control equipment in the battery control area.

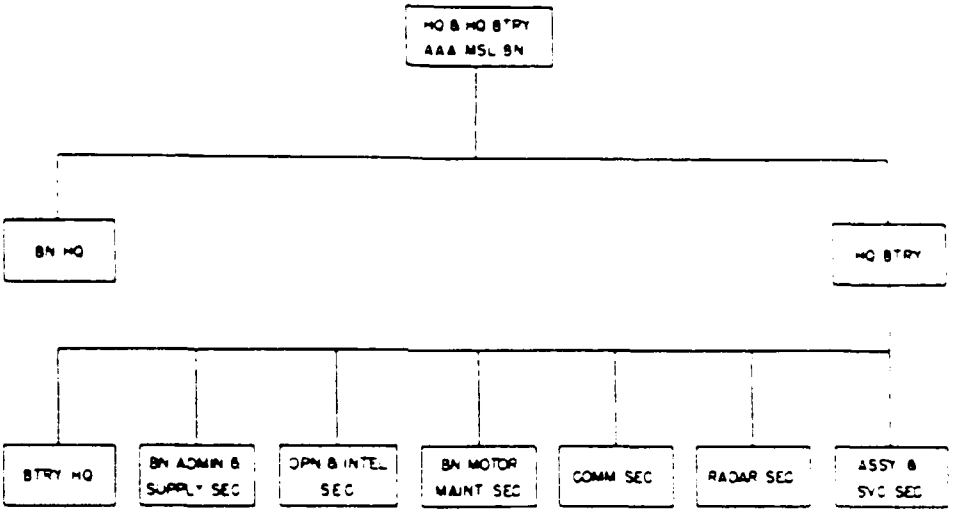
d. Launching Platoon. The launching platoon consists of one launching platoon headquarters and three launching sections.

e. Launching Platoon Headquarters. The launching platoon headquarters is responsible for the operation and training of the three launching sections. It contains technically trained personnel to assemble, test, and perform organizational maintenance on the Nike I missile and booster and launching section equipment. It is responsible for assembling and testing missiles and boosters, and for the maintenance of the rounds at the launching section.

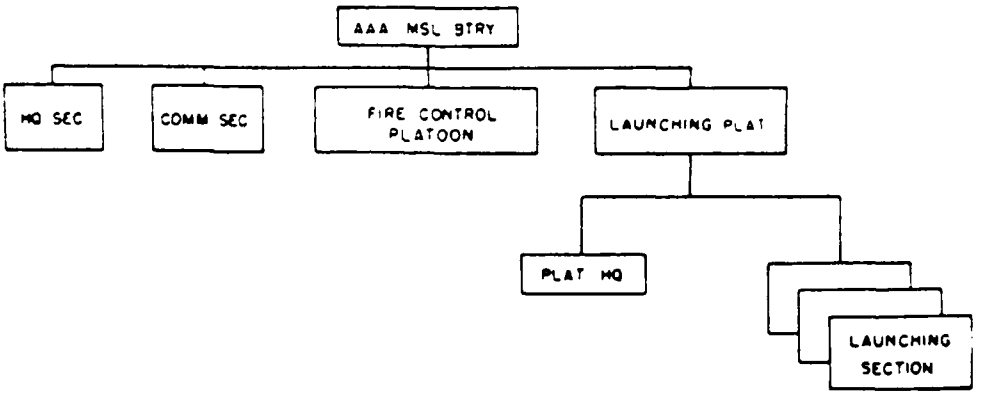
f. Launching Section. The three launching sections are responsible for the preparation of the missile and booster for firing after they have been delivered to the launching section from the assembly and test area and for routine nontechnical



Nike I battalion



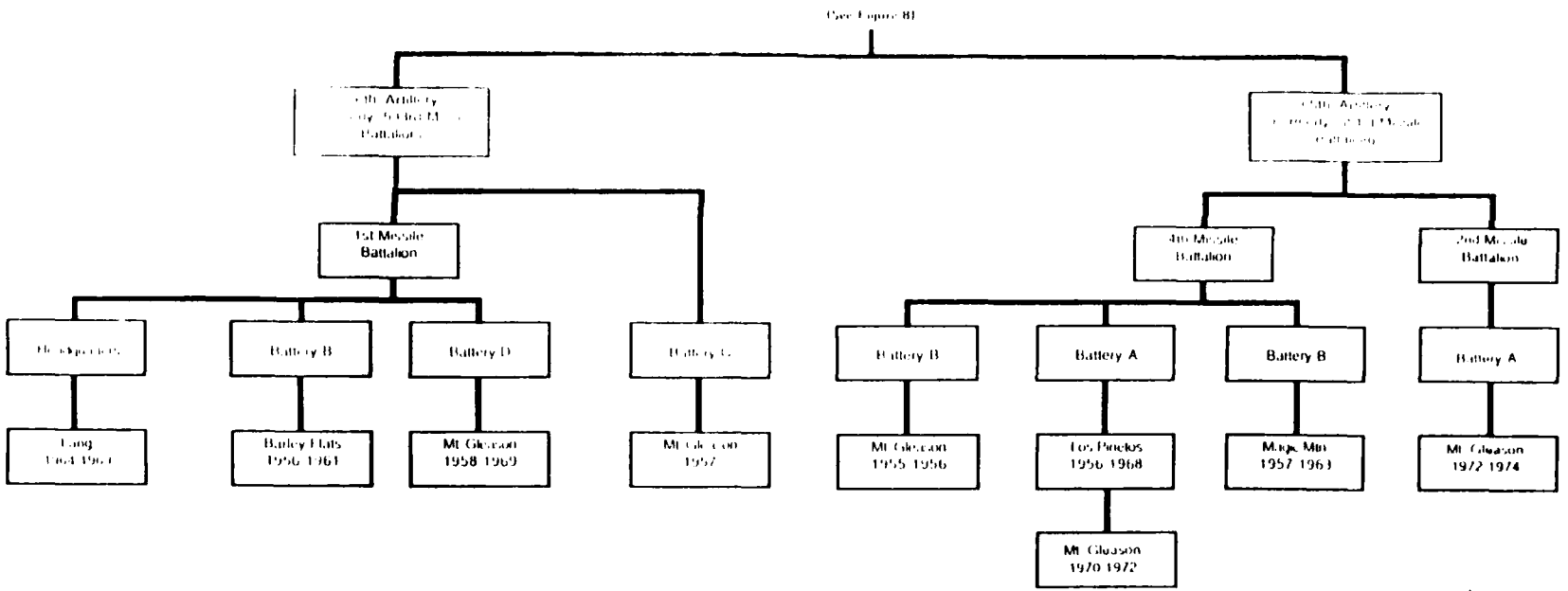
Headquarters and headquarters battery



AAA missile battery

Nike I Battalion, Headquarters and Headquarters Battery, and AAA Missile Battery

FIGURE 10



47th AAA Brigade 56th and 65st Artillery
Los Angeles Defense Area
Angeles National Forest

FIGURE 11

tests, checks, adjustments, and organizational maintenance. (FM 44-80, January 1956)

In summary, the organization of the United States Air Defense System from NORAD to the individual AAA missile firing battery was designed specifically to give general guidance at the brigade level and above, with broad discretionary operating powers at the battalion level. This system served to maintain organizational responsiveness while maximizing the Nike weapons system capability, utilizing quick response as an effective deterrent to enemy attack.

SIXTH REGION

The 6th Region ARAACOM was formed on September 1, 1950, as the Western Army Antiaircraft Command. It was redesignated twice, once in 1955 when it was renamed the 6th Army Antiaircraft Regional Command, and again, in March 1957, when it became the 6th Region ARADCOM.

The original command headquarters was located at Hamilton Air Force Base, California, but was later moved to Fort Baker, California. At the time the region was established it commanded only gun batteries, and was assigned the Army Air Defense of the entire West Coast of the United States.

In 1954, the first Nike-Ajax sites became operational on the Pacific Coast as part of a nationwide program to replace guns as a means of air defense. In September 1958, the first Hercules missile base with nuclear capabilities became operational at Chatsworth.

A major change in 6th Region structure took place in July of 1960. At this time the 7th Region ARADCOM was formed. It took over the responsibilities of air defense in the Pacific Northwest. In 1961 and again in 1963, the boundaries of the 6th and 7th regions were changed to conform more closely with NORAD Region boundaries. In 1966, the 7th Region was eliminated and the 6th Region once again took over responsibility for the entire Pacific Coast and western United States.

In 1970, as part of a phased deactivation of the Nike system, the geographic responsibilities of the 6th Region were expanded to include the entire western half of the United States, including portions of the Gulf of Mexico. These responsibilities remained largely in effect until the closure of ARADCOM in 1974.

In relation to California, the 6th Region operated two major defenses, each under command of a brigade: the 40th Artillery Brigade, San Francisco, and the 47th Brigade, Los Angeles defense area. The brigades operated throughout most of the Nike period in California.

ARAACOM/ARADCOM: GENERAL TIME LINE 1950-1966

The following is intended to highlight the major developments in the history of ARAACOM and ARADCOM with specific references to the Los Angeles Defense Area. The final years in this history (1968-1974) are described in the section of this report entitled ARADCOM Deactivation 1968-1974.

1950	General Orders Number 20, Department of the Army, 20 June 1950, established the Army Antiaircraft Command (now United States Army Air Defense Command). The headquarters was located initially at the Pentagon, Washington, D.C.
1950	Maj. Gen. Willard W. Irvine assigned as first commander to ARADCOM.
1950	Eastern and Western Army Antiaircraft Commands established by General Orders Number 3, Headquarters Army Antiaircraft Command, 28 August 1950.
1950	Headquarters Army Antiaircraft Command moved from the Pentagon to Mitchel Air Force Base, New York.
1950	The Army Antiaircraft command was assigned responsibility for the detailed planning of the nation's antiaircraft artillery defense system.
1951	ARAACOM Headquarters moved to Colorado Springs, Colorado. The headquarters were first located in the Antlers Hotel and later were moved to their present location at Ent Air Force Base.
1951	All antiaircraft units allocated to the air defense of the United States were placed under the Army Antiaircraft Command.
1951	Central Army Antiaircraft Command established headquarters near Kansas City, Missouri. Central ARAACOM was the forerunner of the present 4th Region, U.S. Army Air Defense Command.
1952	Lt. Gen. John T. Lewis became commanding general, Army Antiaircraft Command.
1953	First tactical Army troops fired the Nike. The event occurred at the Red Canyon (New Mexico) Range, near Fort Bliss, Texas. Firing personnel were assigned to the 36th AAA Missile Battalion.
1953	The 36th AAA Missile Battalion moved onsite at Fort George G. Meade, Maryland. This was the first operational missile unit in ARAACOM.
1954	Second and 5th Regions, US ARADCOM, established as "AA Regional Army Administrative Units" by General Order Number 14, Headquarters ARAACOM, 1 July 1954.
1954	Department of Defense combined elements of all military services into a single Continental Air Defense Command (now North American Air Defense Command), directly under the Joint Chiefs of Staff.
1954	Lt. Gen. Stanley R. Michelsen became commanding general, Army Antiaircraft Command.

1955	Western Army Antiaircraft Command renamed 6th AA Region and Central ARAACOM became Central AA Region.
1955	The number of Nike-Ajax battalions deployed around principal cities and industrial areas equaled the number of conventional battalions similarly deployed.
21 Dec. 1955	ARAACOM authorized for first time to lease family housing units near Nike site. A total of 750 units were allocated regional commands.
11 Jan. 1956	Department of the Army reassigned responsibility for supervision of training of National Guard nondivisional antiaircraft artillery units from Continental Army Command to the Army Antiaircraft Command.
1 Jul. 1956	Central AA Region redesignated as 4th AA Region.
1 Sep. 1956	Antiaircraft units at Thule, Greenland, assigned to ARAACOM and further assigned to 1st AA Regional Command.
26 Feb. 1957	A new Nike guided missile, designated as Nike-Hercules, with nuclear capability and many times the destructive power of Nike-Ajax, underwent final tests.
21 Mar. 1957	Army Antiaircraft Command redesignated as the United States Army Air Defense Command. In April 1957, the names of regional commands were changed to conform to the new designation.
11 Jun. 1957	Successful development of the Hawk air defense missile was announced by Department of the Army. Hawk was designed to complement the defense provided by the Nike system by reinforcing Nike's low-altitude capability.
1 Nov. 1957	Lt. Gen. Charles E. Hart became the U.S. Army Air Defense Command's fourth commanding general.
5 Dec. 1957	The first Missile Master, an electronic system for automatically coordinating air defense weapons, became operational in the Washington-Baltimore defense area under the 35th Air Defense Artillery Brigade.
20 Mar. 1958	Names of "Antiaircraft Artillery" brigades and groups changed to "Air Defense Artillery."
24 Apr. 1958	The 738th AAA Missile Battalion fired the first Ajax missile to be launched by tactical troops from the new universal Nike-Hercules system which was designed to fire either Ajax or Hercules.
28 Apr. 1958	Nike-Hercules fired for the first time by U.S. Army Air Defense Command troops. The first four units to fire Hercules were: 738th AAA Missile Battalion (28 April); 36th AAA Missile Battalion

(29 April); 505th AAA Missile Battalion (1 May); 485th AAA Missile Battalion (2 May).

1 May 1958 — Officer personnel authorized to wear the new artillery insignia. The new insignia incorporates the traditional crossed cannons of the artillery, with a stylized, upright missile superimposed over the center of the cannons. Enlisted men assigned to missile units were authorized the new insignia on 15 October 1958.

1 May 1958 — The United States Army Air Defense Command uniform shoulder insignia was changed to eliminate the "AA" and add two symbolic radar beams. The new patch was more illustrative of the dynamic electronic and missile complexities of the command.

1958 — A Nike-Hercules missile engaged and destroyed a Navy-developed Pogo-Hi target at an altitude of 20 miles and a HAWK missile was successfully fired at a QX-5 missile target, both at White Sands Missile Range, New Mexico.

A newly designed drone target, launched at the Red Canyon firing range in New Mexico, was blasted from the sky by a Nike-Ajax fired by Btry. C., 1st Msl. Bn., 56th Arty. (Mt. Gleason), Los Angeles defense area, at a range of about 18 miles. Sentry dogs were assigned to Nike-Hercules sites to insure greater security at night.

The first conference of regional commanders was held in Colorado Springs. Commanding generals attending the conference were Lt. Gen. Charles E. Hart, ARADCOM; Maj. Gen. Lagare K. Tarrant, 1st Region; Maj. Gen. Parmer W. Edwards, 2nd Region; Col. Leslie J. Staub, 4th Region; Maj. Gen. Eugene F. Cardwell, 5th Region, and Maj. Gen. Edward G. McGaw, 6th Region.

1959 — Men at Btry. B, 1st Msl. Bn., 56th Arty., Los Angeles defense area, engaged in a 24-hour-a-day, 7-day vigil to save the mile-high Nike radar site on Mt. Disappointment from the blazing path of the 14,200-acre Angeles National Forest fire.

1960 — For the first time, a missile unit won the ARADCOM Commander's Trophy for the best ARNG air defense unit. Previously, the trophy had been won by ARNG units using 90-mm guns.

Nike-Zeus, the nation's first defense against ballistic missiles, "is no longer a question of scientific breakthrough, but one of funds," Lt. Gen. Charles E. Hart, ARADCOM commanding general, stated at the dedication of the Army's Fort Lawton, Washington, Missile Master.

A Nike-Hercules missile destroyed a Corporal ballistic missile in a demonstration 3 June at White Sands Missile Range, New Mexico.

Plans to strengthen the air defenses of 11 metropolitan areas by replacement of 19 Nike-Ajax missile batteries with a similar number

of Nike-Hercules batteries were announced by the Department of the Army.

1961 — The 4th Msl. Bn., 251st Arty., (Brea) California ARNG, Los Angeles defense area, was awarded the ARADCOM Commander's Trophy as the best ARNG air defense unit.

An all-time firing record was set by an ARNG battalion in the Los Angeles defense area when four Ajax batteries of the 4th Msl. Bn., 251st Arty., California ARNG, posted a score of 96.3 during Annual Service Practice.

Sp4 Dave Lawrence, 4th Msl. Bn., 65th Arty., Los Angeles defense area, became the first amateur since 1953 to win the $5,000 California State Open Golf Championship.

A distinctive decal portraying the Nike system as "a weapons family with a future" was approved by ARADCOM headquarters for command-wide use.

1962 — The 12th AD Arty. Gp. was deactivated at Pasadena, California, and its functions assumed by the 1st Msl. Bn., 56th Arty., and the 4th Msl. Bn., 65th Arty., units under the 47th AD Arty. Bde.

Changes in SNAP (short notice) firing operations were announced, including those in missile assembly, missile preparation, time limits, targets, scoring, and the selection of an honor battery.

1963 — All Nike-Ajax units in ARADCOM completed their firing for the year and it was announced that henceforth only Hercules and HAWK units would fire in the SNAP program.

1965 — The Sprint missile was successfully launched from an underground cell at White Sands Missile Range, New Mexico. Lt. Gen. Charles B. Duff, ARADCOM commanding general.

A reorganization of ARADCOM was announced under which 10 defenses would go under the control of group headquarters.

Sp6 Gilbert N. Curry, Btry. D, 1st Msl. Bn., 56th Arty., at Mt. Gleason, Los Angeles defense area, was awarded the Soldier's Medal for rescuing a driver from a burning vehicle.

1966 — Btry. D, 4th Msl. Bn., 251st Arty., Los Angeles defense area, became the first unit in ARADCOM to fire a perfect score at McGregor Range, New Mexico, since FY 62.

A brush fire that claimed 11 lives at Los Pinetos as it swept through the San Gabriel Mountains in the Los Angeles area was turned back by missilemen of Btry. A, 1st Msl. Bn., before it destroyed the battery site.

SECTION IV

47TH ARTILLERY BRIGADE: BACKGROUND HISTORY 1968-1974

The 47th Artillery Brigade, headquartered at Fort MacArthur during the majority of the Nike period, was formed on January 19, 1942, and was activated 3 days later at Camp Davis, North Carolina. It was originally formed as the 47th Artillery Brigade (AA), but on September 5, 1943, it was redesignated as Headquarters and Headquarters Battery, 47th Artillery Brigade.

The brigade saw combat in Europe and, at the close of World War II, was deactivated on December 16, 1945, at Camp Kilmer, New Jersey. The brigade remained inactivate until April 1, 1951, when it was returned to active Army duty as the 47th Artillery Brigade at Fort Stewart, Georgia. Duties involved the training of the 3rd, 208th, and 227th AAA (Antiaircraft Artillery) Groups which had been inducted from the Army National Guard (ARNG).

On March 10, 1952, the brigade was assigned to Army Antiaircraft Command and to the Western Army Antiaircraft Command which later became the 6th Region ARADCOM. The brigade was stationed at Fort Baker, California during this period and was assigned the task of defending both northern and southern California AAA sectors.

On November 20, 1952, the brigade was transferred to Fort MacArthur, Los Angeles, California where it was assigned the mission of air defense of southern California. The brigade would remain at this station for 16 years during which time it witnessed the end of gun-controlled air defense, and the development of the Nike-Ajax and Nike-Hercules missile systems.

The first responsibility of the brigade upon arrival in the Los Angeles area was to take control of the 466th AAA 40-mm gun battalion. This battalion was later converted to 75-mm "Skysweeper" guns in August 1953. The 551st AAA 90-mm gun battalion was assigned to the brigade on September 14, 1953, and on August 17, 1954, it was converted to a Nike-Ajax site, the first operative (Chatsworth) in the Los Angeles area. This battalion was later redesignated (September 1, 1958) as the 4th Missile Battalion, 65th Artillery, and remained in the brigade throughout its period in Los Angeles.

The 933rd AAA Missile Battalion was reactivated and assigned to the brigade on December 15, 1955. On January 20, 1959, it was reorganized as the 1st Missile Battalion 56th Artillery. Both the 65th and 56th Artillery groups were assigned extensive duty at the Angeles Forest Nike sites.

The 720th AAA Missile Battalion of the California Army National Guard became the first operative Nike ARNG unit in September 1958. It was later redesignated the 4th Battalion, 251st Artillery and remained an integral part of the Los Angeles Nike Defense system until its closure in 1974. One of the bases under its command was White Point. By December 1954, the brigade had four operational Nike-Ajax sites. During the next 2-1/2 years, 12 additional Nike-Ajax sites became operational.

In September 1958, four sites under brigade control were turned over to the California Army National Guard (ARNG). These sites were manned by the 4th Missile

Battalion 251th Artillery. Interestingly, this battalion was named the top ARNG missile Battalion in ARADCOM in 1961. This was a highly successful project pioneered by the 47th Artillery Brigade in California and eventually was carried out nationwide.

The late 1950s and early 1960s witnessed the conversion of many Nike-Ajax sites to Nike-Hercules sites. As a result, a Missile Master control system was brought into operation on March 1, 1961. In 1962, the brigade had 13 operational Nike sites, including four operated by the ARNG.

By 1968, many of the Los Angeles area sites had been deactivated, and by 1969 the brigade was moved to Homestead AFB, Florida. This was part of a nationwide demobilization of the Nike system. In 1974, Mount Gleason, the last Nike site in the Angeles Forest, was deactivated.

The 47th Brigade had a number of prominent commanders during the 1950s and 1960s. Among these were Major General Olaf Kyster, Jr., Brigadier General Willis A. Perry, Brigadier General John T. Honeycutt, Brigadier General C.D. Lang, Colonel Raymond P. Murphy, Colonel James G. Lail, and Colonel Basil D. Spalding.

Major General Kyster was one of the earliest and most prominent commanding generals of the 47th Brigade, and it was in his memory that the Los Angeles Missile Master Facility was dedicated on May 12, 1961. The Los Angeles unit was the tenth and last of its type to be constructed in the United States.

Brigadier General Willis A. Perry commanded the 47th Brigade in 1958. Significant among his contributions was the development of the first family housing project in the Los Angeles area beginning in May 1958. The nationwide establishment of these projects was important as it allowed for the most efficient use of Army personnel in more remote areas. The site was located at Sand Canyon, approximately 7 miles east of Newhall.

The new project, to be used for housing families of Army personnel stationed at the Nike guided missile sites at Mount Los Pinetos and Magic Mountain, was to begin immediately. Construction plans called for 16 duplex units, housing 32 families. "The construction here at Sand Canyon should prove very satisfactory," General Perry said during the dedication. "It will provide a closer community tie-in for Army families and facilitate personnel reaching their stations in case of an emergency. The additional families should also serve to aid local economy," the general added (Argus. July 1, 1958, p. 8).

General Perry was succeeded by General Honeycutt who commanded the Brigade during the late 1950s and early 1960s. Honeycutt oversaw the development of several important innovations in the Los Angeles defense area system. First, was the conversion of Nike-Ajax to Nike-Hercules sites. The first site to be converted was the Chatsworth site in August 1958. By May 1959, the conversion of the second site, located at Mount Gleason, was nearing completion. The conversions were significant as the Nike-Hercules was "atomic-capable." An article in the Argus notes:

> Until the conversion of all existing Nike Ajax sites to Hercules, the Ajax missile will continue to be used. The Hercules site has the capability of firing either a Hercules or an Ajax missile... The

> Mount Gleason battery site is manned by members of Battery D, 1st Missile Battalion, 56th Artillery, commanded by Capt. Daniel T. Mahoney. (Argus, May 1, 1959, p. 7)

General Honeycutt also was involved in establishing the Missile Master system, and he dedicated the site to General Kyster immediately prior to his replacement by General Lang in the fall of 1961.

Brigadier General C.D. Lang's presence as commander of the 47th Brigade was transitory, but it is significant in relation to local air defense as he was involved in the first of many major realignment and deactivation programs instituted by the 6th Region U.S. Army Air Defense Command in the Los Angeles area. Specifically, during his command, the 12tn Air Defense Artillery group, which was headquartered in Pasadena, was deactivated.

Functions of the 12th Artillery group were assumed by two missile battalions: the 1st Missile Battalion, 56th Artillery, under the command of Lt. Col. Donald L. Ducey; and the 4th Missile Battalion, 65th Artillery, under the command of Lt. Col. Charles B. Cole (Argus, July 1, 1962, p. 8). Interestingly, components of the 56th and 65th Artillery were then stationed at all of the active Angeles Forest Nike sites.

Colonel Raymond Murphy succeeded General Lang as commander of the 47th Brigade in the fall of 1962. Additional commanding officers of the Brigade include Colonel James Lail and Colonel Basil Spalding, who also oversaw the initiation and establishment of Nike deactivation programs.

In summary, the 47th Brigade experienced constant and numerous changes of command at the headquarters level, while maintaining continuity at the battalion level, particularly with the continued presence of the 56th, 65th, and 251st Artillery. As such, the Brigade can only be said to be highly representative of the U.S. Army Nike command structure nationwide. For example, the Barley Flats and Los Pinetos Nike installations were under the operative command of the same Battalion and Battery throughout their history. Mt. Gleason and Magic Mountain/Lang did experience some changes in Battery group, but were under the same Battalion throughout most of their history.

SECTION V

MILITARY HISTORY: ANGELES FOREST NIKE SITES

MT. GLEASON (LA-04-C&L)

From 1955 to 1956 Mt. Gleason was manned by Battery B of the 551st AAA Missile Battalion. In 1957 control of the site was transferred to Battery C of the 933rd Missile Battalion, and in 1958 the site was operated by Battery D. On January 20, 1959 the Battalion was reorganized as the 1st Missile Battalion, 56th Artillery. Battery D, 1st Missile Battalion, 56th Artillery served at the site from 1958 to 1969. In 1970, the Mt. Gleason facility was transferred to Battery A of the 4th Missile Battalion, 65th Artillery. In 1972, the site was manned by Battery A of the 2nd Missile Battalion, 65th Artillery, which served at the site until its closure in 1974.

BARLEY FLATS MT. DISAPPOINTMENT (LA-09)

Barley Flats was first manned by Battery B of the 933rd Missile Battalion. This group was reorganized in 1959 as the 1st Missile Battalion, 56th Artillery. Battery B continued to serve at the site until its closure in 1961.

LOS PINETOS (LA-94)

The Los Pinetos Nike installation was first manned by Battery A of the 551st Missile Battalion. This group was reorganized as the 4th Missile Battalion 56th Artillery on September 1, 1958. Battery A served at the installation until its closure in 1968.

MAGIC MOUNTAIN LANG (LA-98)

This facility was first manned by Battery B of the 551st Artillery. This group was later reorganized as the 4th Missile Battalion, 65th Artillery, but Battery B continued to serve at the site through 1963. On June 25, 1964, the 1st Missile Battalion, 65th Artillery moved to the Lang site (LA-98L) to utilize it as a headquarters battalion. This group manned the site until its closure in 1969.

BATALLION HISTORY: NIKE SITES

(1)	Mt. Gleason	LA-04-L and LA-04-C (Also Pasadena or Palmdale)
(2)	Barley Flats	LA-09-L (Also Pasadena)
(3)	Los Pinetos	LA-94-L and LA-94-C
(4)	Magic Mountain	LA-98-C)
(5)	Lang	LA-98-L) (Also Magic Hill)

1955

551st	AAA Missile (NIKE) (Continental) (Army AA Comd) (Less Btrys A & B)	Los Angeles, CA Fort MacArthur
	Btry B	Mount Gleason, CA (Site 04)

1956		
551st	AAA Missile (NIKE) (Continental) (Army AA Comd) (Less Btrys A & B)	Birmingham Hospital Van Nuys, CA
	Btry B	Mount Gleason, CA (Site 04)
1957		
551st	AAA Missile (NIKE) (Continental) (US ARADCOM) (Less Btrys A, B & C	Birmingham Hospital, Van Nuys, CA
	Btry A	Los Pinetos, San Fernando, CA (Site-94)
	Btry B	Magic Hill, San Fernando, CA (Site LA-98)
554th	AAA Missile (NIKE) (Continental) (US ARADCOM) (Less Btry B)	Fort MacArthur, CA
933rd	AAA Missile (NIKE) (Continental) (US ARADCOM) (Less Btrys A, B, C & D)	Fort MacArthur, CA
	Btry B	Mt. Disappointment, CA (Site LA-09)
	Btry C	Mount Gleason, CA (Site-04)
1958		
551st	AAA Missile (NIKE-HERCULES) (US ARADCOM) (Less Btrys A, B & C)	Birmingham Hospital Van Nuys, CA
	Btry A	Los Pinetos, San Fernando, CA (Site-94)
	Btry B	Magic Hill, San Fernando, CA (Site LA-98)
933rd	AAA Missile (NIKE-AJAX) (Continental) (US ARADCOM) (Less Btrys A, B, C & D)	Pasadena, CA
	Btry B	Pasadena, CA (Site LA-09)
	Btry D	Pasadena, CA (Site 04)
1959		
56th Arty	1st Msl Bn (NIKE-AJAX) (US ARADCOM) (Less Btrys A, B, C & D)	Pasadena, CA (PO Pasadena Area Spt Ctr, 95 S. Grand Ave.)

	Btry B	Pasadena, CA (Site LA-09)
65th Arty	4th Msl Bn (NIKE-HERCULES) (US ARADCOM) (Less Btrys A, B & C)	Birmingham Army Hospital Van Nuys, CA
	Btry A	Los Pinetos, San Fernando, CA (Site 94)
	Btry B	Magic Hill, San Fernando, CA (Site LA-98)

1960

56th Arty	1st Msl Bn (NIKE-AJAX) (US ARADCOM) (Less Btrys A, B, C & D)	McCormack Hospital, Pasadena, CA (PO Pasadena Area Spt Ctr, 95 S. Grand Ave.)
	Btry B	Pasadena, CA (Site LA-09)
	Btry D	Pasadena, CA (Site LA-04)
65th Arty	Msl Bn (NIKE-HERCULES) (US ARADCOM) (Less Btrys A, B & C)	Birmingham Army Hospital Van Nuys, CA
	Btry A	Los Pinetos, San Fernando, CA (Site 94)
	Btry B	Magic Hill, San Fernando, CA (Site LA-98)

1961

56th Arty	1st Msl Bn (NIKE-AJAX) (ARADCOM) (Less Btrys A, B, C & D)	Pasadena, CA (PO Pasadena Area Spt Ctr, 95 S. Grand Ave.)
	Btry B	Pasadena, CA (Site LA-09)
	Btry D	Pasadena, CA (Site LA-04)
65th Arty	4th Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A, B & C)	Van Nuys, CA
	Btry A	Los Pinetos, San Fernando, CA (Site 94)
	Btry B	Magic Hill, San Fernando, CA (Site LA-98)

1962

56th Arty	1st Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A, B, C & D)	Fort MacArthur, CA

	Btry D	Pasadena, CA (Site LA-04)
65th Arty	4th Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A, B, C & D)	15900 Victory Blvd.. Van Nuys, CA
	Btry A	Los Pinetos, San Fernando, CA (Site LA-94)
	Btry B	Magic Hill, San Fernando, CA (Site LA-98)

1963

56th Arty	1st Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A, B, C & D)	Pasadena Area Spt Cntr. 95 S. Grand Ave., CA
	Btry D	Pasadena, CA (Site LA-04)
65th Arty	4th Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A, B, C & D)	15900 Victory Blvd, Van Nuys, CA
	Btry A	Los Pinetos, San Fernando, CA (Site LA-94)
	Btry B	Magic Hill, San Fernando, CA (Site LA-98)

1964

56th Arty	1st Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A & D)	Pasadena Area Spt Ctr, 95 S. Grand Ave, CA
	(To move to Site 98, Lang, CA on 25 June 64, on PCS)	
	Btry A	Pasadena Area Spt Ctr, 95 S. Grand Ave., CA 91100
	Btry D	Pasadena, CA (Site LA-04)
65th Arty	Btry A	Van Nuys, CA (Site LA-94) 91401

1965

56th Arty	1st Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A & D)	Lang, CA (Site 98) (PO Saugus, CA 91350)
	Btry A	Van Nuys, CA (Site LA-94)
	Btry D	Pasadena, CA (Site LA-04)

1966		
56th Arty	1st Msl Bn (NIKE-HERCULES) (ARADCOM) (Less Btrys A & D)	Lang, CA (Site 98) (PO Saugus, CA 91350)
	Btry A	Van Nuys, CA (Site LA-94)
	Btry D	Pasadena, CA (Site LA-04)
1967		
56th Arty	1st Bn (WAW4) (NIKE-HERCULES) (ARADCOM) (Less Btrys A & D)	Lang, CA (Site 98) (PO Saugus, CA 91350)
	Btry A	Van Nuys, CA (Site LA-94)
	Btry D	Pasadena, CA (Site LA-04)
1968		
56th Arty	1st Bn (WAW4) (NIKE-HERCULES) (ARADCOM) (Less Btrys A & D)	Lang, CA (Site 98)
	Btry A	Van Nuys, CA (Site LA-94)
	Btry D	Pasadena, CA (Site LA-04)
1969		
56th Arty	1st Bn (WAW4) (NIKE-HERCULES) (ARADCOM) (Less Btrys A & D)	Lang, CA (Site 98) (PO Saugus, CA 91350)
	Btry A	Newhall, CA (Site LA-94)
	Btry D	Palmdale, CA (Site LA-04)
65th Arty	4th Bn (WAXE) (NIKE-HERCULES) (ARADCOM) (Less Btrys A, B, C & D)	15900 Victory Blvd., Van Nuys, CA 91401
	Btry A	Palmdale, CA (Site LA-04)
1970		
65th Arty	4th Bn (WAXE) (NIKE-HERCULES) (ARADCOM) (Less Btrys A, B, C & D)	15900 Victory Blvd., Van Nuys, CA 91401
	Btry A	Palmdale, CA (Site LA-04)
1971		
65th Arty	(To be Inactivated o/a 30 Jun 71) 4th Bn (WAXE) (NIKE-HERCULES)	15900 Victory Blvd.,

	(ARADCOM) (Less Btrys A, B, C & D)	Van Nuys, CA 91406
	Btry A	Palmdale, CA (Site LA-04)
1972 - 1974		
65th Arty	2nd Bn	
	Btry A	Palmdale, CA (Site LA-04)

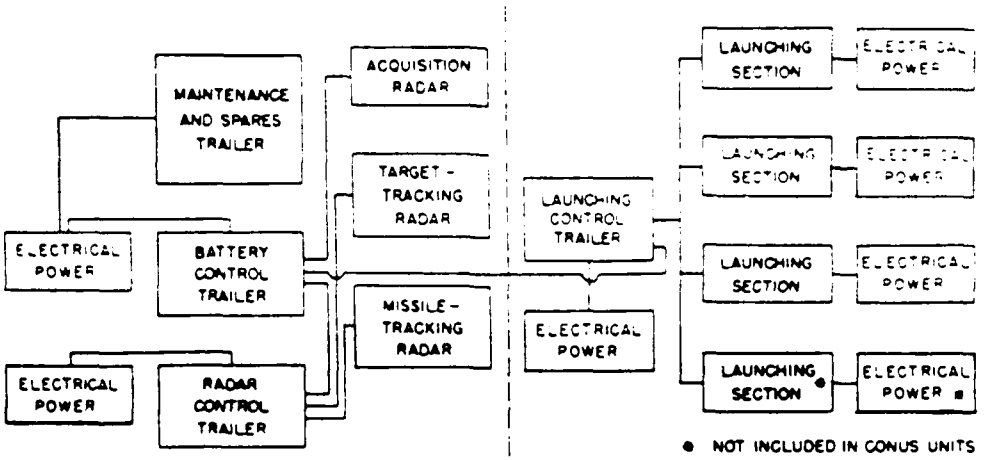
SECTION VI

THE NIKE BATTERY: EQUIPMENT AND OPERATIONS PROCEDURES

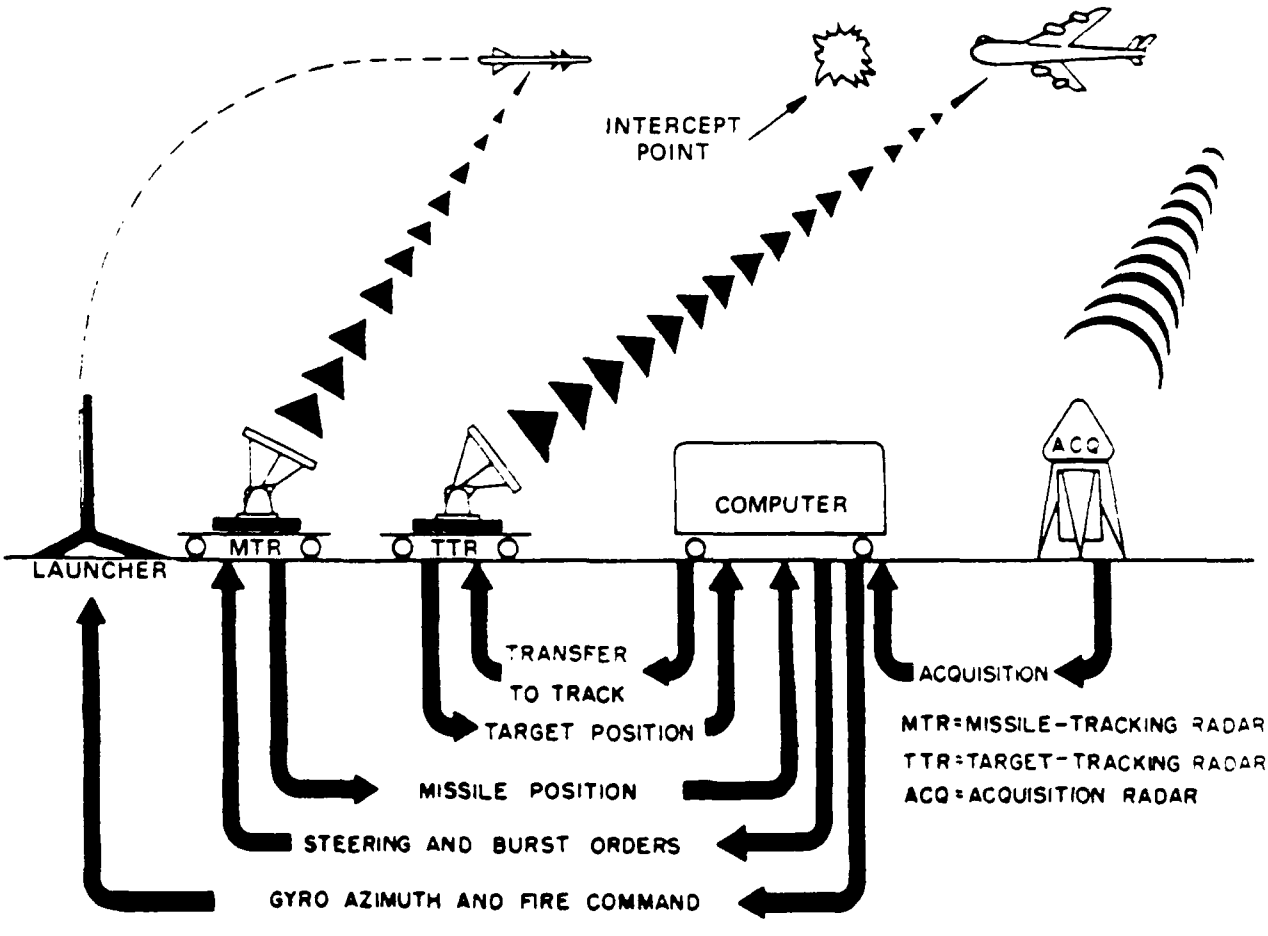
BATTERY CONTROL

The Nike guided missile was specifically designed to extend the capabilities of antiaircraft artillery far beyond that of artillery guns. To do this, the Nike system employed a command guidance type of control, the first of its type to be widely deployed (see Figure 12). Briefly, the target was initially engaged by the acquisition radar followed by the target tracking radar which tracked the designated target throughout the engagement. An additional radar, the missile tracking radar, tracked the missile throughout its entire flight. The two tracking radars then fed the position information into a computer in the battery control trailer. This information was subsequently analyzed and steering orders issued to the missile to guide it to a point of interception. The battery control area contained a number of major equipment items.

> The major items of equipment in this area are ground guidance and control equipment. They are --
>
> a. Acquisition Radar. This radar is composed of the acquisition antenna, receiver, and transmitter. The operator's controls and displays are located in the battery control trailer. It is used to detect, observe, identify, and designate selected targets.
>
> b. Target-Tracking Radar. This radar is composed of the tracking antenna, receiver, and transmitter mounted on a drop-bed antenna trailer. The three operator's controls and displays (azimuth, elevation, and range) are located on the target console in the radar control trailer. The target-tracking radar tracks the designated target and furnishes target present position data to the computer.
>
> c. Missile-Tracking Radar. This radar is composed of the missile-tracking antenna, receiver, and transmitter, mounted on a drop-bed antenna trailer. The operator's controls and displays are located on the missile console in the radar control trailer. The missile-tracking radar tracks the missile, supplies the computer with missile present position data, and provides a communication link for transmitting orders from the computer to the missile. The missile-tracking radar is similar in appearance to the target-tracking radar.



Nike I system.



Data flow.

Nike I System and Data Flow

FIGURE 12

d. Battery Control Trailer. The battery control trailer contains the acquisition radar cabinet assembly, the battery control console assembly, the computer assembly, an early warning plotting board, and an event recorder and switchboard cabinet assembly. The battery control console assembly contains the displays and controls required by the acquisition radar operator, the battery control officer, and the computer operator.

e. Radar Control Trailer. The radar control trailer contains the target console assembly, the missile console assembly, the radar power cabinet assembly, and the radar range and receiver cabinet assembly. The missile and target consoles contain the controls and displays required for the missile-tracking and target-tracking radar operators.

f. Radar Collimation Mast Assembly. This assembly is composed of the radar test set, the radar collimation mast, and the target-head assembly. It is used in collimating, testing, and adjusting the missile-tracking and target-tracking radars.

g. Electrical Generating Equipment. This equipment produces the necessary electrical power to operate the equipment in the fire control area. Commercial power with electrical converters (changers) to change 60-cycle power to 400-cycle power will be utilized where available.

h. Battery Control Area Cable System. This cable system interconnects the various elements in the battery control area.

i. Interarea Cable System. The interarea cable system includes the cables necessary to connect the battery control area with the launching area. When cable installation and easement costs for the interarea cables are excessive, wire and radio voice control will be utilized. The feasibility of developing a radio link to replace the three interarea cables is being studied by the Department of the Army.

j. Maintenance and Spares Trailer. This trailer provides facilities for storing portable test equipment, spare components, and spare parts. Components of the acquisition radar are carried in this trailer during march order. (Procedures and Drills 1956)

The above command system was later updated throughout the greater Los Angeles Defense Area. The first of these was the installation of the Interim Battery Data Link (IBDL), which was in operation in Los Angeles by May 1958, and was the last system to be installed nationwide.

> The IBDL permits electronic coordination of missile batteries, functioning as a target data link between firing batteries of air defense installations. The IBDL indicates to battery commanders, on their individual radar scopes, which targets are engaged by other batteries in the area. Possible targets, picked up by radar, appear on the screen of a scope which looks much like the television set in the average home. (Argus, May 1, 1959, p. 7)

This system coordinated with each individual battery control area, provided each battery commander with information which assured that all targets within the greater area would be more efficiently engaged than was possible with individual battery unit control.

This system was replaced in 1961 by the Fort MacArthur installation of the Missile Master System; the last installation of its type built nationwide. A contemporary description notes:

> It is the first integrated system for tying together all elements of Army air defense from target detection to target destruction. Each system consists primarily of an automatic data communication network, and of automatic data processing and display equipment. This system is designed to achieve the maximum effectiveness in firing of all Nikes and other Army air defense weapons at any given installation.
>
> Among the many advantages of the Missile Master is the ability to exercise control of each firing battery by directing it to commence firing or stop firing according to the needs of the defense. This virtually eliminates the chance that more than one battery might launch missiles at the same target. (Argus, August 1, 1958, p. 1)

LAUNCHING AREA

The launching area contained the launching control area, launching section equipment, and the launcher loaders. The launching area was generally located at a distance from the battery control, and it was most often connected to it by means of the previously described interarea cable system. In brief, the launcher area provided for the maintenance, storage, testing, and firing of the Nike missile. Most West Coast launcher areas were equipped with underground magazine storage similar to that found at the Angeles Forest sites. The equipment at each launcher included:

a. Launching Control Trailer. The launching control trailer contains the launching control panel, the launching control switchboard, and the test responder. The launching control panel contains the controls, displays, and communications equipment necessary to supervise and monitor the activities of the launching sections during an engagement and to act as a relay station between the launching sections and the battery control area.

b. Launching Section Control Cabinet. This cabinet, located underground in the underground magazine storage type site, or in the launching section revetment in aboveground installations, contains the necessary controls, indicators, and communication facilities to enable a launching section to control the preparation and firing of its rounds. It also coordinates the activities of the launching section with the launching control panel operator in the launching control trailer. It consists of a launching section control panel and a launching section power cabinet.

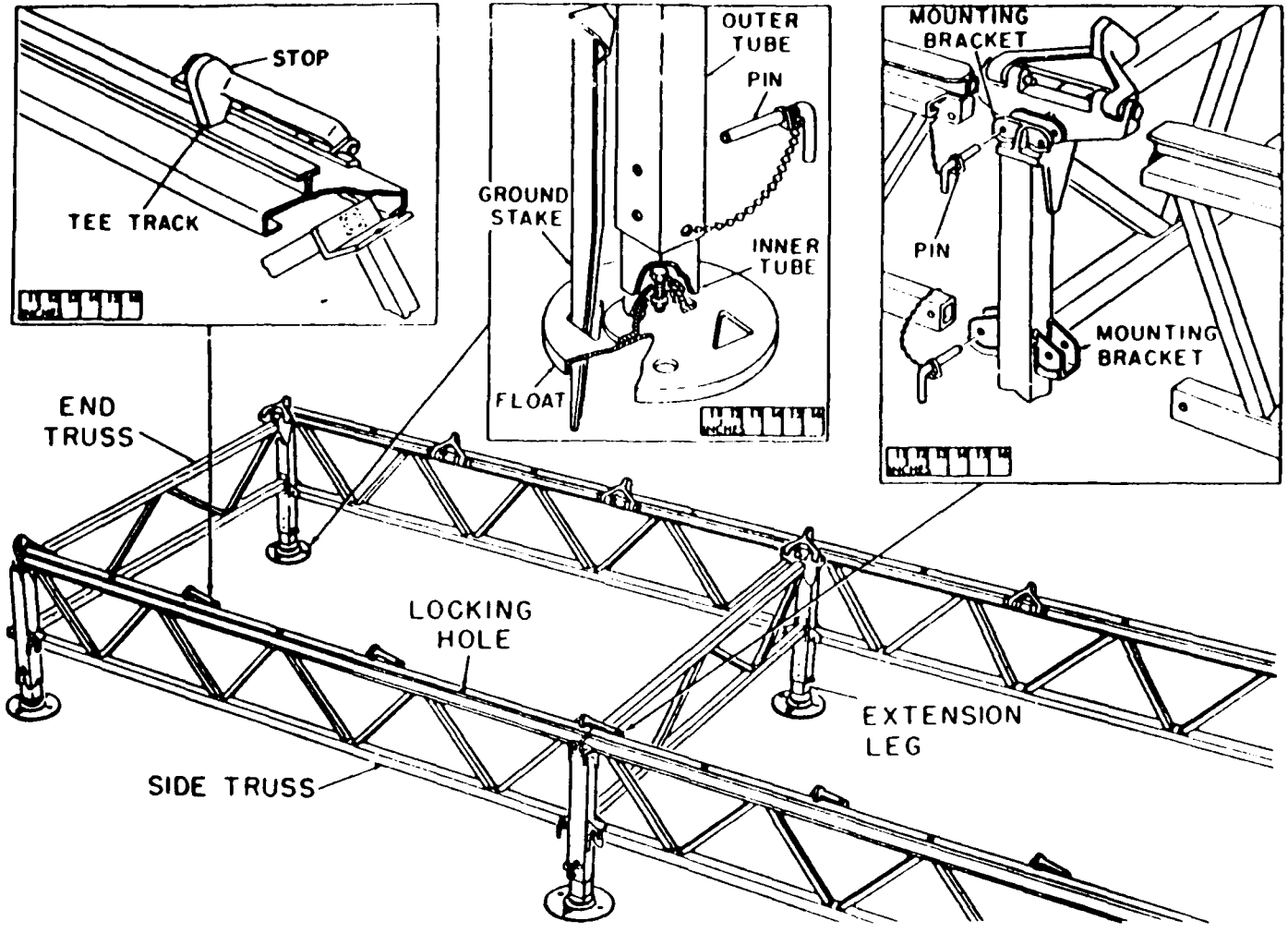
c. Launcher-Loader Assemblies. The launcher-loaders provide the equipment necessary to accomplish the physical operations at the launching site for storing, loading, and firing the rounds.

d. Electrical Generating Equipment. Underground sites. Electric power for underground sites is supplied by 150-KW 60-cycle diesel generators or commercial sources when available. Direct 60-cycle power is used for the elevator. Where 400-cycle power is required, the 60-cycle power is converted to 400-cycle power by means of frequency converters (changers).

e. Launching Area and Cable System. This cable system interconnects the various elements in the launching area. (Procedures and Drills Nike I Missile, January 1956, p. 9)

The central feature of the launch area was the undergound magazine and its associated launcher loader assembly (see also Section V for detailed description of the underground magazine). Storage racks held the missiles in the underground area using a system of locking pins (Figure 13). The missiles were then rolled to the elevator and on to the elevator launcher.

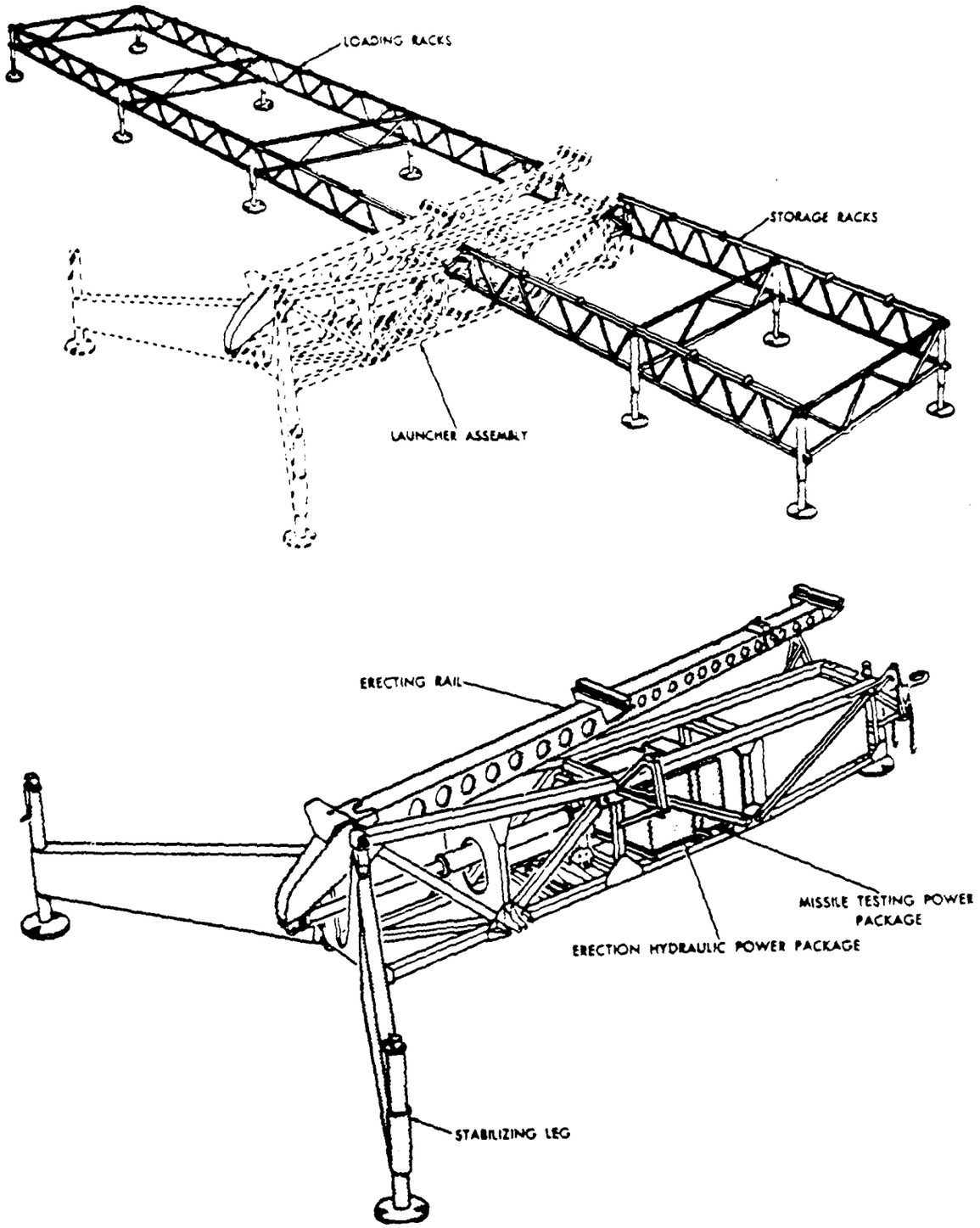
Each launcher loader included a launcher and five sections of loading racks (Figures 14 and 15). Three sections of racks were on the left side of the launcher and were used for storing missile-booster combinations. The sections on the right side of the launcher were used for storing empty launching and transport rails or rejected



Taken from the Department of the Army Technical Manual TM-4430 Procedures and Drills for the Nike I System

Storage Rack

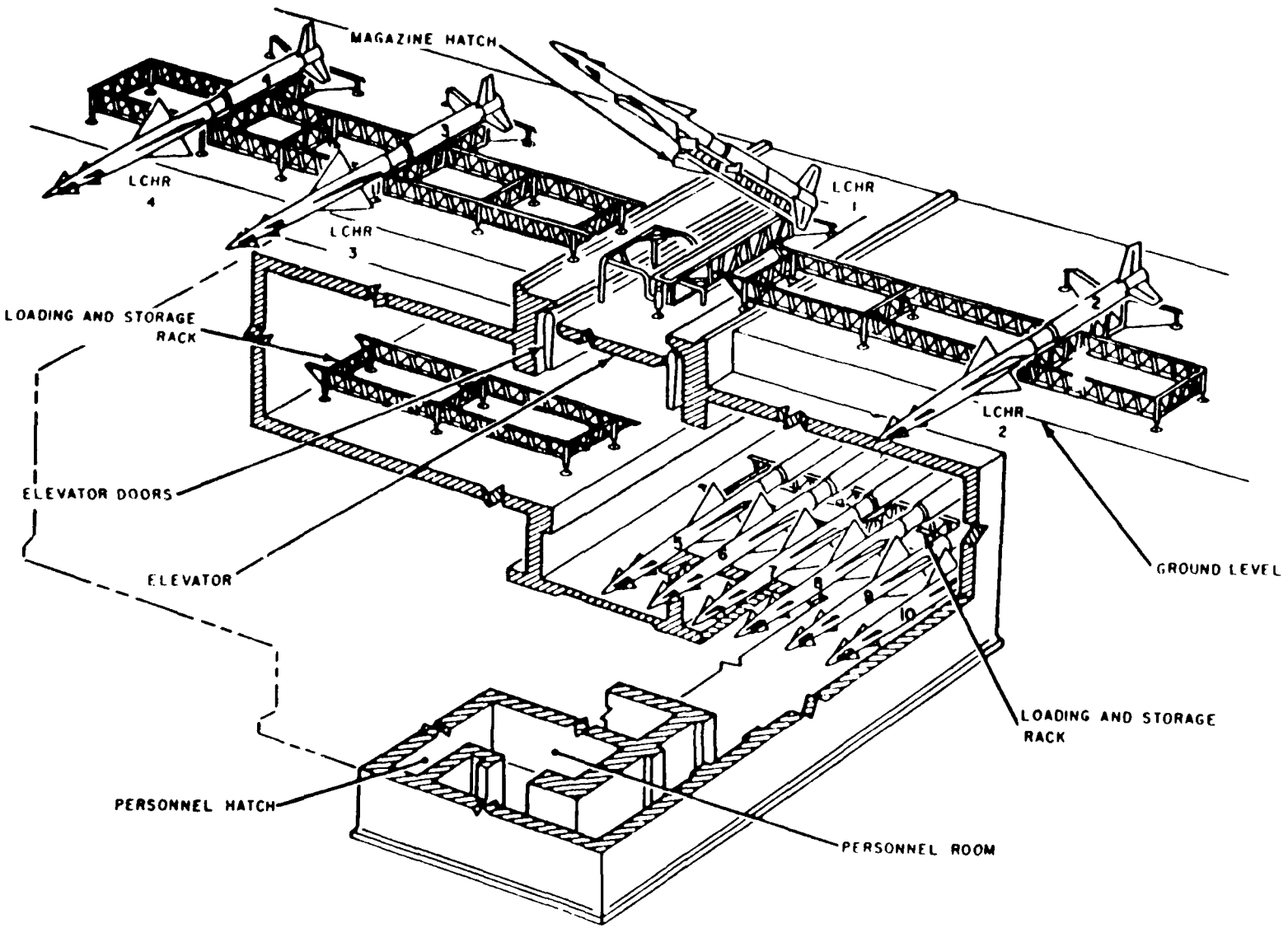
FIGURE 13



Taken from the Department of the Army Technical Manual FM 44-80 Procedures and Drills for the Nike I System

Launcher and Launcher-Loader Assembly

FIGURE 14



Taken from the Department of the Army Technical Manual TM 44-80 Procedures and Drills for the Nike I System

Cutaway View of Underground Magazine

FIGURE 15

rounds. Each facility could accommodate four rounds, one on the launcher erecting arm and one at each of the stations flanking the launcher. Options were provided for the installation of additional racks. The entire unit was equipped with electric and hydraulic systems for testing and erecting the round prior to firing. The actual firing process was strictly regulated, and a multitude of safety measures were incorporated into the process. (See Appendix for the complete firing process for underground magazines such as those in the Angeles Forest.)

In summary, the equipment and operations procedures employed at Nike installations were solely the result of the Army's efforts to adapt its troops to an unprecedented and experimental technological system. The technology required, therefore, that a highly organized process be established. Furthermore, the Nike bases were extremely well equipped and staffed. (See Appendix for a complete Table of Organization and Equipment (TOE) at a typical Nike base.)

SECTION VII

THE NIKE BATTERY: A GENERAL DESCRIPTION IN RELATION TO THE ANGELES FOREST NIKE SITES

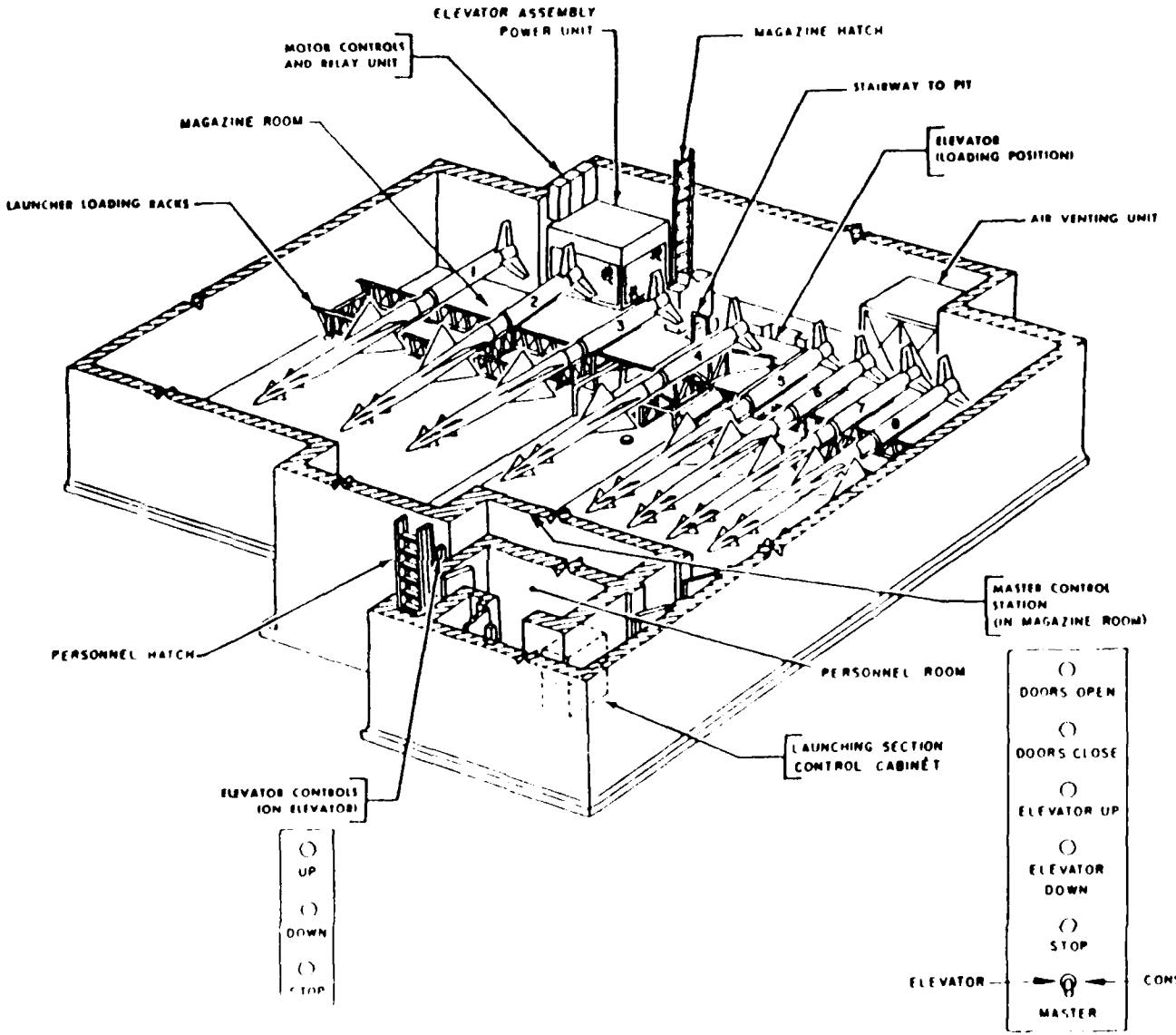
The typical Nike missile battery site was divided into two major areas, battery control and launching facilities. These were most often located on two separate parcels of land. A third parcel, providing housing, was generally found only at remote area Nike sites. The battery control area contained the fire control platoon equipment including the central radar and communications facility. The launching area contained all launching platoon equipment. Within the launching area there was also an assembly and service area which contained facilities for the testing, fueling and storage of missiles.

Nationwide, the actual design of the administration and housing areas varied widely, and was a function of the site plan, contractor, and geographic location of each site. The underground missile storage areas are, in fact, the only generally consistent feature of Nike sites. These facilities are described as follows:

> At permanent CONUS installations, each Nike section will be normally emplaced in an underground storage magazine site. Each section's site contains an underground room for storing the rounds (magazine room), an elevator to carry the rounds to the surface for firing, four launcher operating panels, and four launcher-loader assemblies. Three of the launchers are permanently emplaced above ground. These are referred to as satellite launchers. The fourth launcher is mounted on the elevator. When the elevator is down, a missile and booster can be pushed from the storage racks in the magazine room onto the launcher on the elevator. When the elevator is raised, the missile and booster on the elevator can be pushed from the elevator launcher onto the satellite launchers. The elevator may be raised, lowered, or stopped from the master control station in the magazine room, from the controls on the elevator, or from the launching section control panel in the personnel room. Doors are provided to close the elevator shaft opening when the elevator is down. Hydraulic power to operate the elevator and the doors is supplied by the elevator assembly power unit in the magazine room. Fresh air for personnel is provided by the air vent unit in the magazine room. (Procedures and Drills for the Nike I System, January 1956, p.91) (See Figures 16, 17 and 18.)

MT. GLEASON (LA-04)

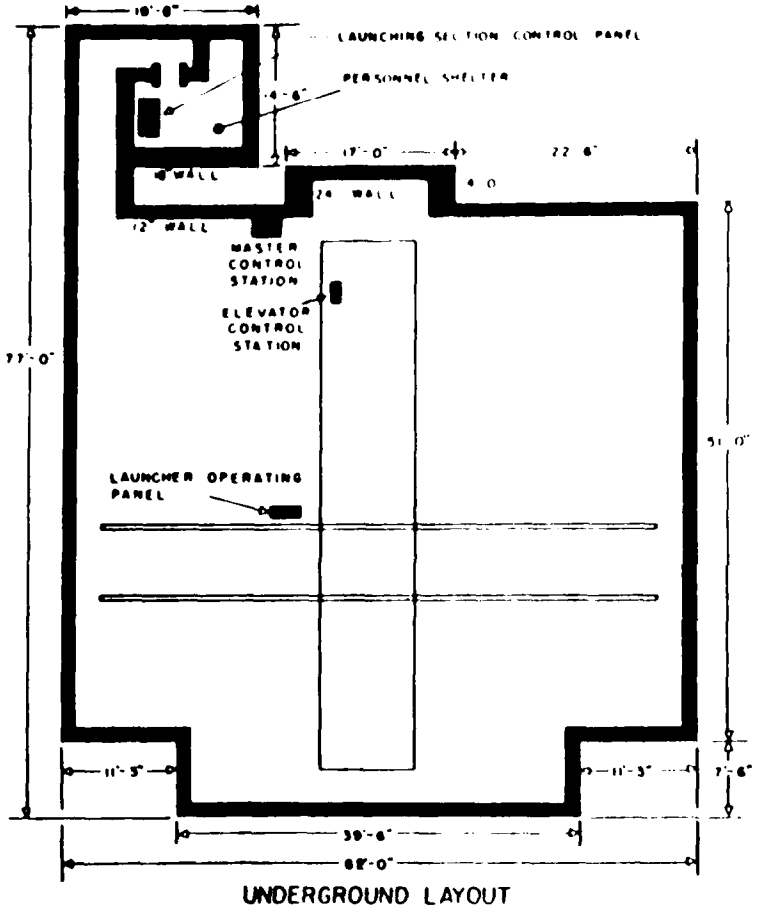
Mt. Gleason is typical in the configuration and construction of the underground storage magazines. As a remote area site, it was also provided with administration



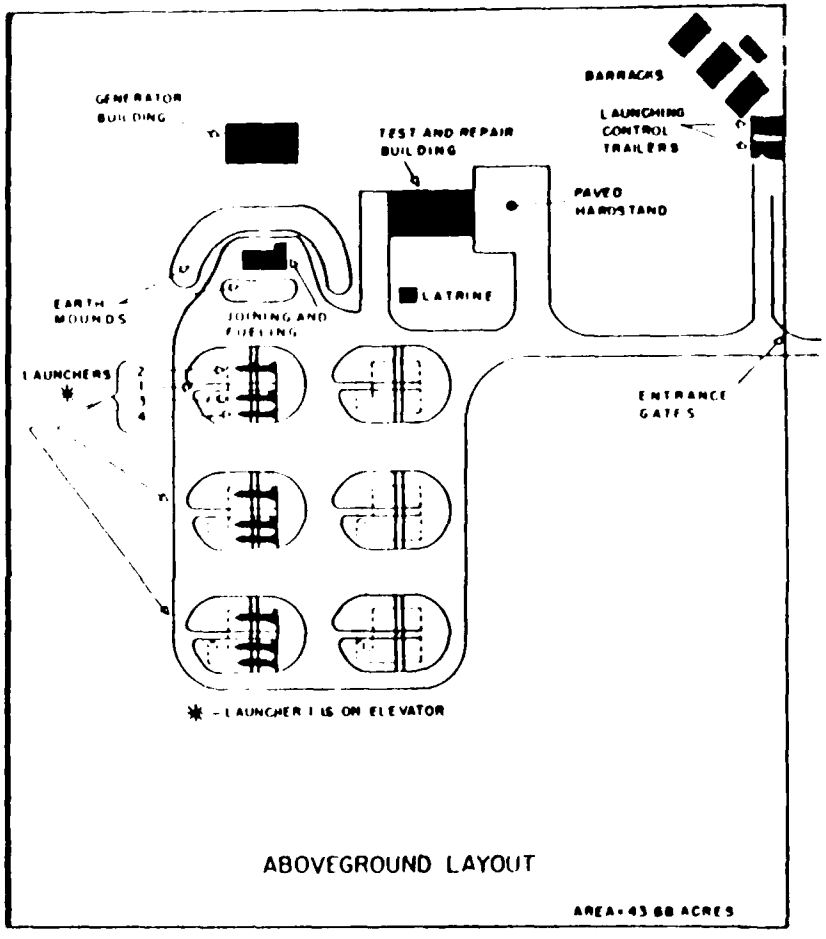
Taken from the Department of the Army Technical Manual TM 14-80 Procedures and Drills for the Nike I System

Elevator Controls, Underground Magazine

FIGURE 16



UNDERGROUND LAYOUT



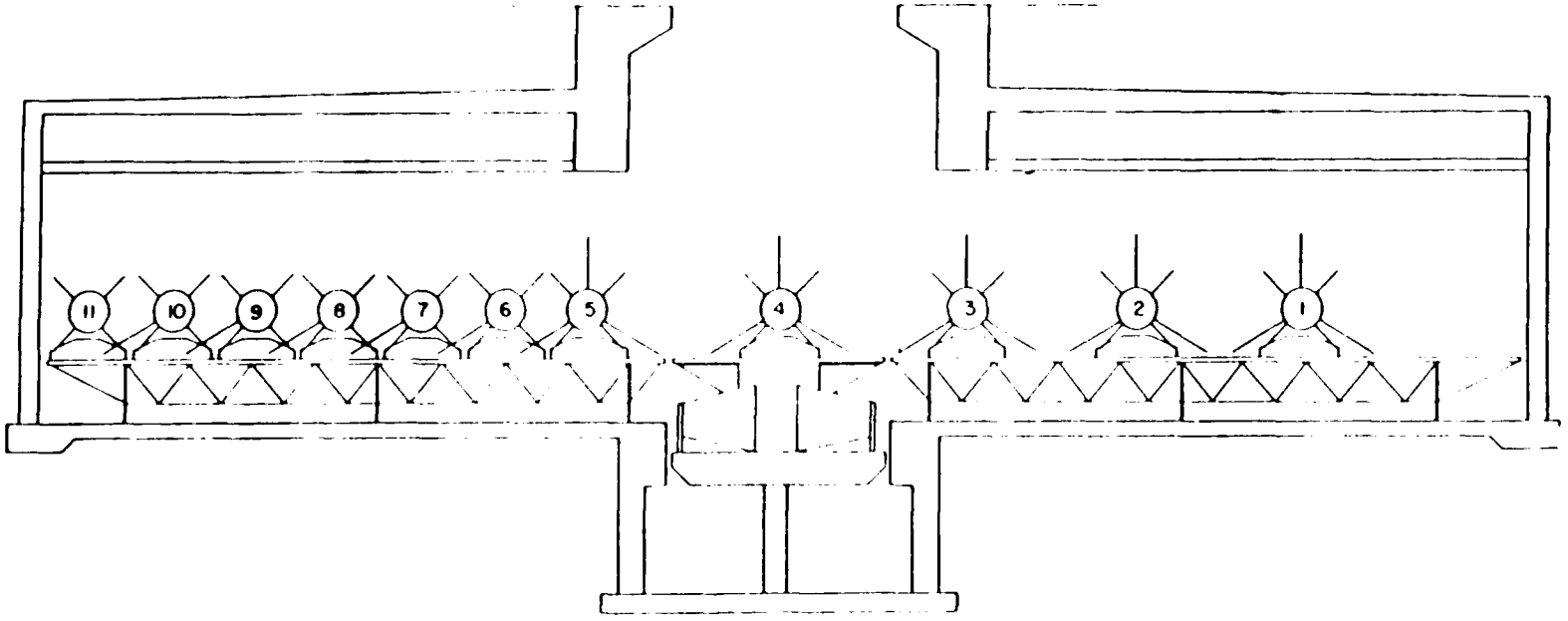
ABOVEGROUND LAYOUT

AREA = 43.68 ACRES

Taken from the Department of the Army, Technical Manual TM 1180 Procedures and Drills for the NIKE Ely system

Underground Magazine Type Launching Area

FIGURE 17



Taken from the Department of the Army Technical Manual EM 14-80 Procedures and Drills for the Nike I System

Layout of Missiles in Magazine Room

FIGURE 18

facilities, a barracks, a mess hall, and various other support structures. (See Appendix for a complete structures listing). Like all Nike installations, the radar control facility was located in an area removed from the launch area. Mt. Gleason is, however, unusual in two respects. First, it was the world's highest Nike missile base (Argus: Feb. 1, 1961, p.6). Second, as a result of the elevation, it has a somewhat unusual architectural design. Briefly, the roofs of the structures are very steeply pitched to prevent damage from periodic heavy snowfall. This is an interesting and direct reflection of the way in which geographic location can influence architectural design.

BARLEY FLATS/MT. DISAPPOINTMENT (LA-09)

Barley Flats is, in terms of conceptual design, similar to all Nike bases in that the battery control area (Mt. Disappointment) was located in an area removed from that of the launch control area. This site does differ from the majority of Nike bases studied, in two ways. First, it has the same unusual "snow roofs" that are present at the Mt. Gleason site. Second, the access areas are surrounded by concrete block units. These units may have been added later when the site was utilized as part of the Civil Defense Program. As in all remote area Nike sites, Barley Flats was provided with a barracks, administration building, and all appropriate support facilities. (See Appendix for a complete structures listing.)

LOS PINETOS (LA-94)

Los Pinetos is unusual for several major reasons. First, the battery control area, support facilities, and launch area are all in a single geographic location. This provides the viewer with an immediate visual appreciation of what a Nike base was. Second, the Los Pinetos site is more intact than each of the other sites studied. Third, the Los Pinetos site was the first Los Angeles Defense Area Nike installation to utilize family housing. The design of the buildings and underground storage magazines is strictly utilitarian, but some rather unusual decorative rock walls detail the site near the barracks and entry areas.

MAGIC MOUNTAIN LANG (LA-98-C & L)

This facility is typical in that the battery control area (98-C) is removed from the launch area at Lang Station (98-L). The design of the launch area is utilitarian. It has three in-line storage magazines which are typical in construction and configuration. The only unusual features of the launch and administrative facility are its size, and its multi-level launch area. This can be explained, in part, because it was utilized as a battalion headquarters from 1964-1969. The battery control area (98-C) has been demolished, but the launch area retains a degree of integrity despite new construction and vandalism.

SECTION VIII

FOREST FIRES AND THE ANGELES NATIONAL FOREST NIKE SITES

A number of major forest fires impacted the Angeles Forest Nike sites between 1959 and 1970. Each of these fires directly threatened or damaged the operation of either the radar or launcher areas. Research indicates that fires impacting remote area Nike sites was a problem nationwide. The following account, which summarizes fires in relation to Nike Bases in the Angeles Forest, is taken directly from articles published in the Army newspaper, Argus. It is important to note that official Forest Service records differ substantially with the Argus articles. Specifically, most of the fires mentioned were either smaller or in areas not especially threatening to the Nike bases. The Forest Service records regarding these fires are both detailed and accurately recorded, and it must be assumed that the Argus accounts are partially due to a certain degree of over-zealous reporting. Regardless, they are an interesting reflection of the way the Army viewed forest fires in relation to the operation of their Nike bases.

The first major fire was in 1959. It involved over 14,000 acres and was centered atop Mount Disappointment. The seven day blaze threatened the Nike Integrated Fire Control (IFC) radar facility. Fire actually swept up to the fence enclosure of the installation, surrounding it on three sides before being brought under control. Despite dangerous sparks and flaming gases that threatened the Nike unit, located 5,960 feet up in the Angeles National Forest mountains north of Los Angeles, Capt. Johnson reported that no damage to radar equipment or injury to personnel was incurred.

The Mount Disappointment IFC area contained the radar guidance system for the Nike Ajax missile Battery B of the 1st Missile Battalion, 56th Artillery. The battery was one of 16 of the 47th Artillery Brigade in the greater Los Angeles area. The Battery's launcher area, located some five miles further back in the mountains, was not endangered by the fire (Argus, 12/1/59, p.1). While the fire did not actually damage the facility, the majority of the Army crew were evacuated along with all classified material. Emergency generators were also utilized. In effect, the operations control of the Barley Flats site (LA-09) was inoperative several times during the fire. Furthermore, the official Army publication describing the control of the fire noted that the threat was still regarded as significant due to the fact that no rainfall had been recorded at the site for nearly a year.

The second fire impacting the Nike bases was, at the time, the worst fire in the recorded history of the Angeles National Forest. The fire was ignited by lightning in an area to the northwest of Magic Mountain. The fire occurred in the fall of 1960 and eventually involved over 27,500 acres. In the summer and fall of 1960, fires impacted the Mt. Gleason and Barley Flats (LA-09) sites. Fires burned through the launcher and administrative areas of Battery B, 4th Missile Battalion, 65th Artillery at Barley Flats. Six 250-foot lengths of launching area cable and 11 room dividers from the barracks which were in outside storage were destroyed at the Battery B site (Argus, 11/1/60, p.11). Fires also later threatened Mt. Gleason Battery D, 1st Missile Battalion, 56th Artillery, but to a lesser extent than Battery B. A thunderstorm started four fires in the vicinity of Battery D but the fires were extinguished by Nike personnel and the Forestry Service (Argus, 11/1/60, p.11).

The third major fire affecting the Nike sites involved the Los Pinetos base (LA-94). Stationed at the base was Battery A, 1st Missile Battalion, 56th Artillery.

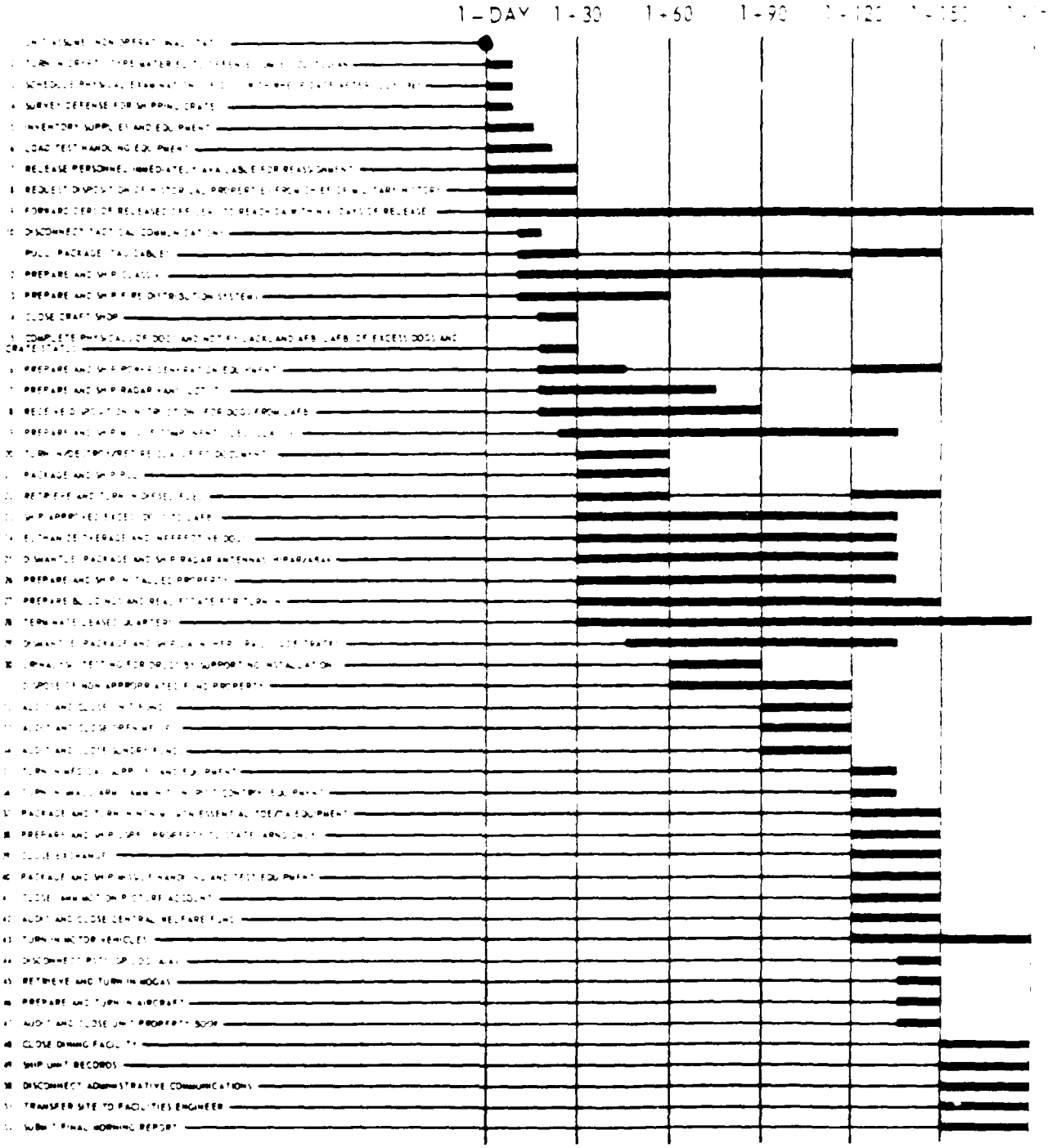
The fire, dating to the fall of 1966, was first noticed by members stationed at the Nike site in the early morning of November 1, near the radar control (IFC) area. Fire control lanes were immediately scraped around the administrative area, a measure which ultimately was determined to have saved the entire base. The fire was extremely intense. As one report describes:

> In the administrative area, the flames were licking through the security fence toward the living quarters, scorching the trees, and setting fire to telephone poles in the area. The heat was so intense, it melted a TV antenna atop the billets. The fire continued to rage until noon around all three areas: IFC, launcher, and administration. The troops received their first break when two back-up fire fighting crews from the 4th Msl. Bn. 65th Arty. Los Angeles Defense were ordered to the area. (Argus, 12/1/66, p.3)

The 2,000 acre fire cut communications to the base and eventually claimed eleven firefighters' lives before it was extinguished.

The fourth major blaze occurred in 1970. The Mt. Gleason site (LA-04) was threatened at the Radar (IFC) facility. The sentinel dogs and all personnel were evacuated to fallout shelters before the blaze was contained (Argus, 12/1/70, p.5).

In summary, the Mt. Gleason, Barley Flats, Los Pinetos and Magic Mountain sites were each threatened by fire on at least one occasion. As such, the fire issue provides insight into an unusual problem associated with the operation of the Angeles National Forest Nike bases.



Shown is the general schedule to be followed by most fire units during the phasedown. In some cases the sequence will be changed to accommodate the local situation.

*Sequence and timing may vary based on individual coordination with support agencies

Sequence of Deactivation Events

FIGURE 19

SECTION IX

ARADCOM DEACTIVATION, 1968-1975

A number of Nike sites were deactivated nationwide prior to 1968 or were formally designated as excess real property, due primarily to changes in fire control systems or Hercules installation. It was not until the fall of 1968, however, that a program targeting the deactivation of sites was initiated on a large scale nationwide. Official notification of this program declared that:

> The action is the latest in a series of economy measures being taken by DOD to cut FY69 expenditures as required by the Revenue and Expenditure Control Act of 1968. (Argus, September 1968, p. 3)

This program was implemented for two major reasons. First, the Nike system had been outdated by other antiballistic missile defense plans. Second political pressures were beginning to be felt with regard to reducing defense expenditures in conjunction with the planned withdrawal from Vietnam. By 1971, this program had become a part of a major realignment of American defense forces. Thus, in an open message to the troops of his command, Lieutenant General George V. Underwood, Jr., the ARADCOM commanding general noted the need to "reduce the cost of the defense program." He added:

> Moreover, your selection for inactivation was not based upon your record of accomplishment in comparison with batteries scheduled for retention. The decision was based upon the following factors:
>
> a. The priority of the various defended areas.
>
> b. Retention of the maximum number of defenses.
>
> c. Providing the best possible all-around coverage within a particular defense.
>
> d. Retention of those batteries which contributed most to the tactical effectiveness of the defense.
>
> e. Maintaining sufficient Active Army batteries to provide the necessary rotation base for our Air Defense Artillery units overseas and to preserve a source of personnel to man Safeguard ABM units. (Argus, March 1, 1971, pp. 4-5)

All West Coast operations were planned for deactivation by June 30, 1975. The Pentagon justified these actions as part of the final realignment of United States Air Defense. In brief:

> DOD explained that a review by the Secretary of Defense of the mission of continental defense against the strategic nuclear threat recognized the changes in Soviet capability in intercontinental ballistic missiles in relation to that represented by their manned aircraft.
>
> As the United States has relinquished the option for continental defense against strategic missiles, the Department of Defense has placed a lesser priority on maintenance of the existing posture for defense against manned aircraft.
>
> Future efforts will be directed toward operations that will provide long-range warning of a bomber attack and improved air space surveillance and control. These efforts will also stress the importance of insuring that the U.S. technological base keeps pace with potential airborne threats and that the U.S. continues its lead in anti-ballistic missile technology. The Department of Defense will also maintain and continue development of our field Army air defense systems and capacilities. (Argus, February 1, 1974, p. 2)

The disbanding of the Nike system was carried out in an orderly manner, designed to reduce the impacts of the closure of individual units on both miliary and civilian personnel. Civilians were, for example, given all possible assistance in being transferred to other nearby positions. Military personnel were reassigned, and there was no programmed involuntary release from active service as a result of the deactivations. The closure of individual units was planned to take 180 days (Figure 19). It was, as may be expected, an extremely complicated process involving the packaging and shipping of equipment, drug testing, severing communications, disposal of excess equipment, and the final transfer of the site to facilities engineers. (See Appendix for excess property reports for all sites.)

As with all Nike sites the closure of the installation was primarily the responsibility of the Corps of Engineers, following implementation of the previously described closure procedures by the Army. The final closure of the installation generally involved:

1) Notification by the Army that the property was in excess of its needs and requirements.

2) Physical securing of the site to prevent accident or vandalism.

3) Preparation by the Corps of Engineers of a Report of Excess Real Property.

4) Submittal of the Property Report to the General Services Administration.

5) Investigation of the sale, demolition, interim use, or alternate use of the deeds or restrictions placed on the property at the time of acquisition.

SECTION X

ANGELES NATIONAL FOREST: ACQUISITION, CONSTRUCTION AND DEACTIVATION

MT. GLEASON (Also known as Palmdale or Pasadena)

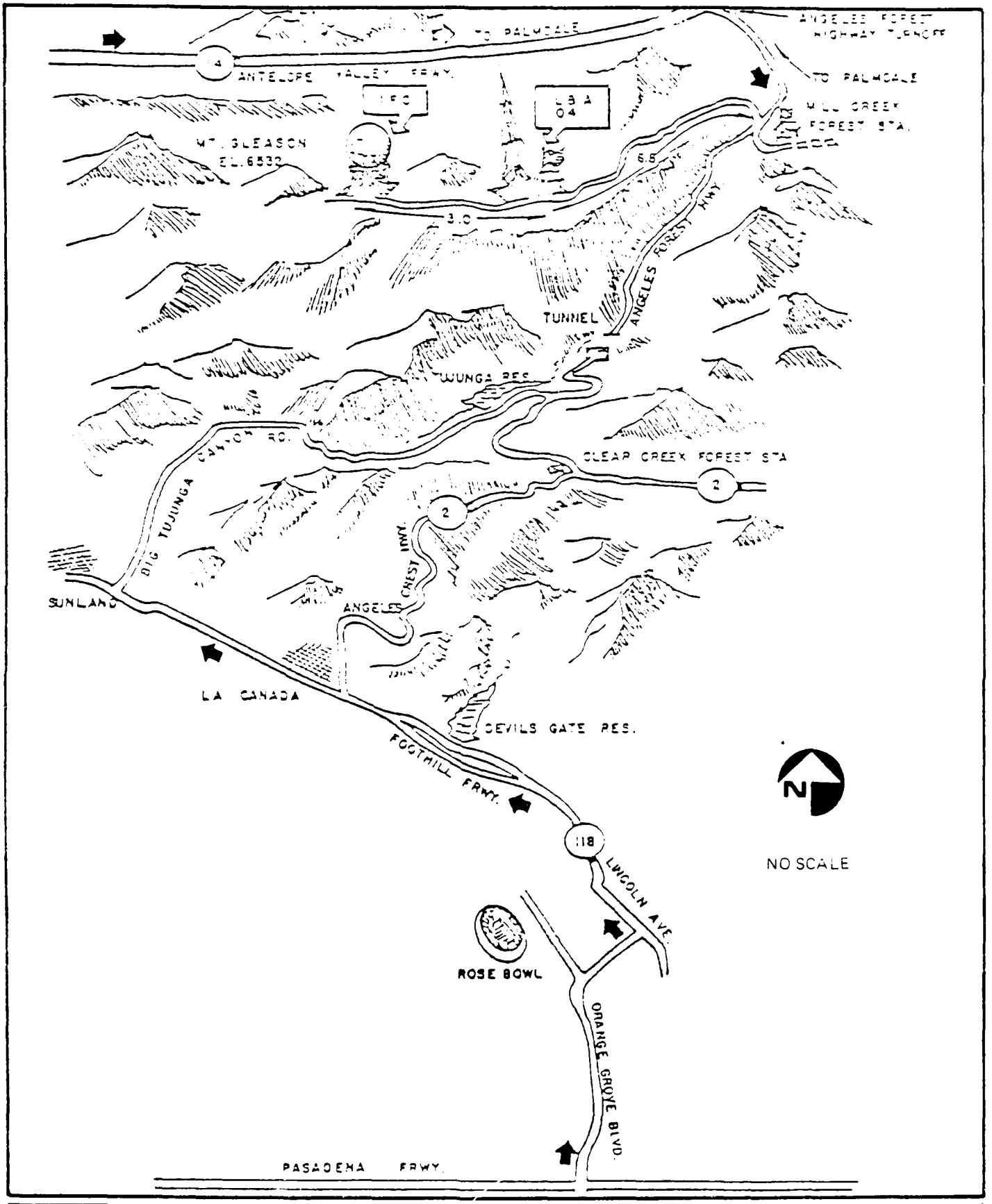
Acquisition

Mt. Gleason (LA-04 C&L) was the first site selected and acquired in the Angeles National Forest for construction of a Nike installation (Figure 18). This site, and all other Angeles Forest sites, was selected largely because the Army had determined it would be necessary to relocate several previously selected installations slated for Nike battery and launch control construction. A directive issued by the Assistant Secretary of the Army John Slezak on December 3, 1953 to the Chief of Engineers, Department of the Army, Washington D.C., noted that "it will be necessary to re-site some of the installations as a result of further investigations and due to possible changes in siting criteria to provide the best possible defense pattern." These changes were most likely due to the difficulty of acquiring privately owned land, and a reluctance to construct future sites in more heavily populated areas due to possible, adverse publicity.

A "Disposition Form" dated December 14, 1953 was issued by Col. B. R. Wimer, Chief of the Facilities Service Division, and was immediately sent to the Chief of Engineers, Los Angeles, as an explanation of Slezak's directive. It notes:

> 1. Reference: Memorandum for Deputy Chief of Staff (Operations and Administration), from the Assistant Secretary of the Army (Materiel) dated 3 December 1953.
>
> 2. Request that the Chief of Engineers take immediate action and try to select new, less expensive, but tactically suitable Guided Missile sites to be used in lieu of sites LA-56-C&L (Palos Verdes Hills) and LA-70-C&L (Playa Del Rey). The selection of new sites will be made in coordination with the local Antiaircraft Commander in the Los Angeles Area.
>
> 3. Upon completion of the action indicated in paragraph 2, request that the Chief of Engineers coordinate the new proposed sites with the Commanding General, Sixth Army and the Commanding General, Army Antiaircraft Command prior to forwarding recommendations to G4. Direct communication between the Chief of Engineers, Division and/or District Engineers is authorized for this purpose.

As a result, the Los Angeles District sought and selected a number of potential sites in the Angeles Forest. On June 23, 1954, the Chief of Real Estate, J. L. Maritzen, made application for the acquisition of the Mt. Gleason site. The letter, and the Forest



SKETCH MAP OF ROUTE TO MT. GLEASON NIKE SITE

FIGURE 20

Service Response. are of particular interest for they are unique and precedent setting. Mr. Maritzen's letter reads:

Gentlemen:

Application is hereby made for and on behalf of the Department of the Army for a permit authorizing the use and control of certain land in the Angeles National Forest.

The indicated site area is peculiarly adapted for use in connection with the military protection of Los Angeles and adjacent territory. It is essential for that purpose. The site area is the minimum requirement for the installation and for security protection.

In order that appropriated funds may be expended to construct the installation, it will be necessary that the permit be drawn for a term which is not cancellable on the part of the Forest Service.

If compatible with Forestry regulations, it is suggested that the permit be issued for a term extending for the length of time a military necessity exists for the use of the site. If such a term cannot be authorized, it is suggested the permit to be drawn for a term of ten years, with an option on the part of the permittee to extend the term for an additional period of ten years.

The installation will be classified and the exclusive use of the site area will be required for the enforcement of military and security regulations.

Joint use of the ingress and egress road to the site should also be granted. This is required in order that appropriated funds may be expended to improve the road, should such improvement be required.

The permit should contain a provision to the effect that any property installed on the land may be removed by the military authorities, and also that the military authorities have the privilege of cancelling the permit on 90 days notice.

The inclosed Mount Gleason, California, U.S.G.S. Quadrangle Sheet and Drawings, Los Angeles Defense Area Special AAA, Site LA-04-L designate the land which is the subject of this request.

> Should any question arise concerning the proposed permit a representative from this office will be pleased to call at your office to discuss the situation.

Maritzen's letter set the pattern for all future applications for permits from the Forest Service. Specifically, the provisions declaring that the military will have exclusive use of the site is of particular importance. The informal nature of the letter is also of interest as in later applications the procedures were more rigorous. Even more remarkable is the Forest Service response to the Corps of Engineers application. In a July 20, 1954 letter Forest Supervisor, Wm. V. Mendenhall writes:

> Reference is made to your application of June 23, 1954 (Your File No. SPLRD 601.1 (Los Angeles Defense Area - Site LA-04-C&L - Mt. Gleason), and to our telephone conversations with Mr. Edgerton concerning the permit to be issued to the Corps of Engineers covering the proposed development at Mt. Gleason. As discussed yesterday we shall proceed with preparation of the necessary permit and submit it to your office for review.
>
> In the meantime this letter will serve as permission for you to proceed with the needed improvements as outlined in your application.

The Forest Service, in this instance, had actually cleared the Army to proceed with their improvements prior to the signing of the permit. Construction was, however, delayed by the issuance of the final permit. The reasons for this are unclear as a September 30, 1954 "Memorandum for the District Engineer" simply notes:

> Battery LA-04 (Mt. Gleason):
>
> a. Control, Launcher and Housing Area — Government-owned -Controlled by Forest Service. Available for construction. This office awaiting issuance of final Use Permit by Forest Service.

It is probable that the Army and the Corps anticipated future potential problems with the forthcoming permit. If so, the eventual delay was a lengthy one for it was not until January 12, 1955 that the original special use permit was signed. Some construction relating to roadway access may have occurred prior to this date, but the majority of construction probably took place following the issuance of the permit.

Final construction at the site continued, however, to be delayed. for the special use permit for construction of a water line, pump station, storage tanks and sewer lines was not issued until February 3, 1956. The conditions attached to this permit were considerably more restrictive than the first July 20, 1954 approval of the original January 12, 1955 permit. The new conditions included the following provisions:

18. The permittee agrees to take all reasonable precautions to avoid damage to property and resources of the United States, and diligently to undertake suppression action in the event of fire resulting from the exercise of the privileges herein granted.

19. The rights-of-way for the pipeline shall be stabilized to prevent erosion in accordance with specifications as given by the Forest Supervisor.

20. At proposed pump house number 3 and in the first two saddles west of the proposed pump house where the pipeline will be adjacent to the road, 1 1/2" fire hydrants will be installed in the pipelines.

21. This permit conveys no rights to the permittee to use of the water involved.

22. In the event of fire, the permittee shall allow the Forest Service or other cooperating firefighting agencies to draw upon any or all existing water lines and reservoirs for water to be used for filling fire trucks or pumping for actual firefighting purposes.

23. The pipeline shall be buried to a depth of at least two feet.

24. All water storage tanks, except they be redwood, shall be painted brown.

25. All pump station buildings shall be painted brown.

26. All brush cut in clearing the right-of-way shall be disposed of by chipping where feasible. Where this is not feasible, brush shall be disposed of as directed by the District Ranger.

27. Timber will not be cut nor destroyed without first obtaining permission from the District Ranger.

28. Any blasting shall be done with an electric detonator and under written permit from the Forest Service.

29. In consideration of the privileges granted by this permit, the Army does hereby stipulate and agree to conform and abide by the regulations and conditions contained herein.

No documentation exists that directly addresses this delay. It may, however, reasonably be assumed that the Forest Service was becoming increasingly aware of the magnitude of the Nike building program. By this time, they had received and approved applications for sites located at Barley Flats/Mt. Disappointment, Los Pinetos, and Magic Mountain/Lang. It is likely, therefore, that the Forest Service sought to apply restrictions equally on each installation as each new permit was applied for. This observation is substantiated by a review of permits for access roads which were applied to each of the Angeles Forest sites. The provisions and conditions were extensive, and included:

18. The permittee shall take all reasonable precautions to prevent fires and diligently to undertake suppression action in the event of fire resulting from the exercise of the privileges herein granted.

19. The U. S. Army shall maintain said roads in good, safe, and serviceable condition, at least to their present standard. It may perform all work and activities necessary for such purposes and may also make minor improvements to the existing roads.

20. Erosion Control. To the fullest practicable extent consistent with the service requirements of the roads, their maintenance will be carried on in the manner that will cause the least disfiguration of the landscape and reduce erosive surface to a minimum. Materials shall be balanced, if possible, but if waste becomes necessary such surplus will be deposited in a manner that will not create a displeasing appearance along the road, nor accelerate erosion in any stream channels.

To reduce scarring and erosion to a minimum, 'slide material' or other waste will be disposed of by hauling to pre-determined dumping points. These points are to be located in advance by the Army and the Forest Officer in charge. The permittee will mark these dumping points with station numbers for ready reference.

Embankment slopes shall be protected from erosion in accordance with the specifications issued by Region 5, U. S. Forest Service, entitled "General Specifications on Erosion Control Methods," which are hereby made a part of this permit.

21. Drainage. Drainage, culverts, headwalls, outfalls, shall be preserved as nearly as possible in the condition as constructed.

Drainage conditions shall prevent pooling of surface water on the road bed and protect the road against loss from bank or shoulder slipping.

22. Roadway Clearing. Roadside brush shall be kept cut back at least to the edge of the traveled way.

Removal of trees along said roads must be approved by the District Ranger.

All brush and debris resulting from maintenance of roadway shall be disposed of as directed by the District Ranger.

23. Blasting. When the use of explosives is necessary for maintenance of the road, the permittee shall use the utmost care not to endanger life or property.

Blasting operations shall be conducted under the most careful supervision, and only with specific permission from the Forest Supervisor. The permittee shall adopt precautions in using explosives which will prevent damage to surrounding objects and the scattering of rocks, stumps, or other debris outside of the roadway slopes. Where necessary, and at any point of special danger, the permittee shall use suitable mats or some other approved method to smother the blasts, or ripping may be required instead of blasting.

To prevent future slides and to preserve the stability of cut slopes, every effort shall be made to reduce the use of explosives to a minimum. Blasting operations shall be conducted under the most careful supervision. The Forest Supervisor shall have the authority to require the permittee to discontinue any method of blasting which in his opinion is dangerous to the public or destructive to property or natural features.

All explosives shall be stored in a secure manner, in compliance with local laws and ordinances, and all such storage places shall be marked clearly "DANGEROUS - EXPLOSIVES." Where no local laws or ordinances apply, storage

shall be provided satisfactory to the Forest Supervisor, and in general not closer than 1,000 feet from the road, or from any building or camping area.

The permittee shall use only electric detonators for blasting during the period from May 1 to October 31, and during other periods as required by the Forest Supervisor.

When necessary, in the opinion of the Forest Supervisor, the permittee shall employ a watchman whose duty it shall be to patrol after blasts are discharged, for a sufficient period of time to insure against the escape of fire from such operations.

A close watch shall be kept after each blast to see that no fire starts. The following equipment shall be kept at the scene of all blasting operations: one 5-gallon back-pack pump kept filled with water, two shovels and one axe.

24. Excavation. Where maintenance work or minor changes in the road necessitate excavating, the work shall be carried out according to the following standards:

Cut slopes shall be not steeper than 3/4:1 in soil, 1/2:1 in shale or decomposed rock, and 1/4:1 in solid rock.

The tops of all cuts, except in solid rock shall be rounded off to harmonize more naturally with the slope of the adjacent natural terrain: and similarly the slope of cut banks shall be flattened to make a pleasing transition to natural or embankment slopes.

25. Roadside Scenic Values. No ropes, cables, or guys are to be fastened to or attached to any existing trees for anchorages or in lieu of placing of dead men, unless specifically authorized by the Forest Supervisor. When permitted, the trunk shall first be adequately wrapped with a sufficient thickness of burlap or canvas, over which soft wood cleats shall be tied, before any wire, chain, cable, or rope is attached to the tree.

Any timber, trees, or landscape features accidentally scarred or damaged by the permittee shall be treated as ordered by the Forest Supervisor. He may require that they be removed, neatly trimmed up, or restored as nearly as possible

to the original condition. All scars made on trees by maintenance operations, or the removal of limbs, shall be painted as soon as possible with brown paint.

26. The U. S. Army agrees that it, its agents, representatives, contractors, and sub-contractors will take all reasonable precautions to avoid damage to timber, young growth and watershed cover.

27. Public Use. The roads shall at all times be open to public use. They will be maintained and used in such a manner as will insure the least possible interference with public use. Crossings will be maintained in a usable conditions.

28. Abandonment. If and when the roads are no longer required for the use for which they are intended they shall be disposed of as requested by the Forest Supervisor.

29. In consideration of the privileges granted by this permit, the Army does hereby stipulate and agree to conform and abide by the regulations and conditions contained herein.

Additional special use permits and amendments were issued for the Mt. Gleason site including an amendment to the original permit. The permit history is summarized as follows:

Special Use Permit LA-822 dated 1-12-55 as amended 10-8-56.	Original permit
Special Use Permit LA-1069 dated 2-27-57, as amended 12-7-62 and 4-28-71.	For access road.
Special Use Permit LA-928 dated 2-3-56 as amended 3-1-56.	For water line, pump station, storage tanks and sewer lines.

In addition, a private land lease was entered into on September 20th, 1954 regarding water rights. The lease was between the United States of America and Edmund Rich and Joseph and Kathryn Bohme. The lease records that the Army had obtained:

The exclusive right and privilege to develop water on and remove any and all water from the Last

> Chance and the Eagle patented mining claims located in unsurveyed Section Thirty-one (Sec. 31), Township Four North (T4N) of Range Twelve West (R12W), San Bernardino Base and Meridian, Los Angeles County, California; together with the right and privilege to lay pipelines and conduits on and across said and adjacent lands and to install pumping plants, storage basins and tanks on said land at points to be determined from time to time.
>
> Excepting, however, that portion of the Eagle Mining Claim conveyed by deed Recorded March 22, 1902 in Book 1659 of Deeds, Page 16.
>
> The Lessor reserves the right to use any excess water not used by the Government.

Construction

No construction records exist for the Mt. Gleason site, but a detailed examination of station lists, permits, and the excess property report does give a general idea of the construction and occupation history at the site. Construction proceeded rapidly at the Mt. Gleason site. Some work must have taken place prior to the signing of the original permit, for station lists show that the site was occupied by the Army in June of 1955. At this time, construction at the site was clearly not completed. Final installation of sewer lines and water lines had not taken place, and conditions at the base must have, at best, been rather primitive. It is probable that during this early period water was provided by the private lease of the Last Chance and Eagle mining claims. for all construction necessary to open and operate the base was completed prior to the granting of the special use permit (1956) for water and sewer lines. Permits for final completion of access roads were not issued until February of 1957.

The above illustrates several major points regarding the construction history of Mt. Gleason. First, a high priority was placed by the Army on opening and manning the base, as it was activated prior to the construction of several important amenities. Second, these actions illustrate the construction problems associated with the development of such a remote installation. Finally, these policies and procedures indicate the increasing resolve of the Forest Service to carefully guard the resources of the Angeles Forest.

Following completion of the access roads in 1957, it is likely that no new major construction took place at Mt. Gleason until it was converted from an Ajax to a Hercules installation. Station lists indicate that this conversion took place late in 1959 or early in 1960. The installation of the Hercules missile required that tighter security measures be adopted due to the nuclear capability of the Hercules. As a result, sentry dogs were generally assigned to Hercules sites.

> The demand for adequate security measures at Nike Hercules sites without the use of additional manpower or large increase in cost brought about the final approval from Department of the Army to train sentry dogs and their handlers at an interim

> training center at Fort Benning, GA. Each team's training period lasts eight weeks. Upon completion of the training the teams are being sent to sites designated by the Commanding General, USARAD-COM. (Argus, November 1, 1958, p.9)

This involved both the construction of kennels and additional security fencing. The first trained dogs arrived in Los Angeles in the winter of 1958, and were subsequently installed at each Hercules site.

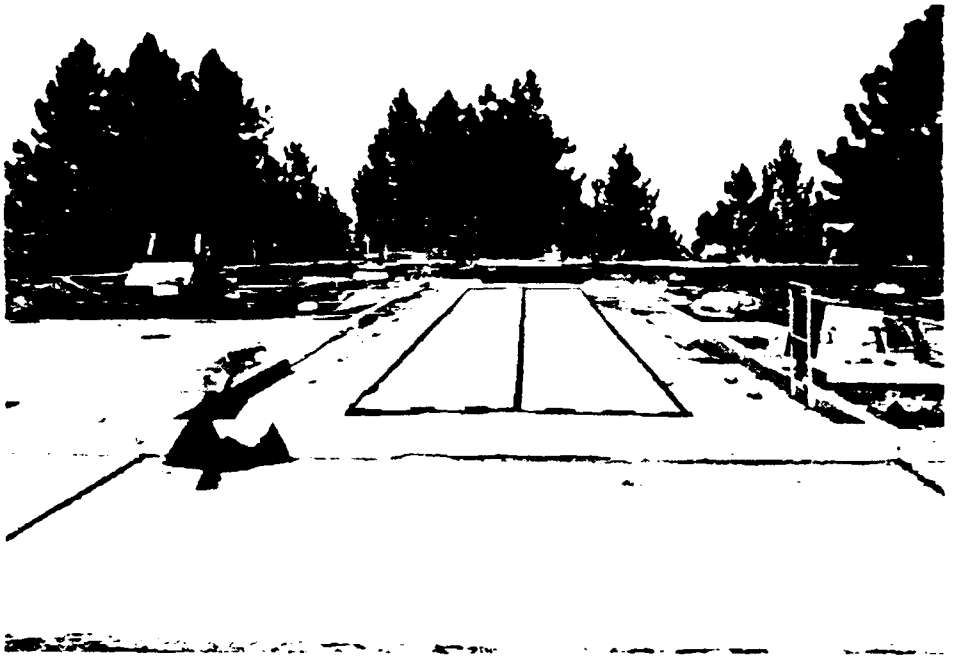
The conversion of the Mt. Gleason site to the Hercules system was an extremely early one in the Los Angeles area. Additional support facilities, including radar and maintenance buildings were certain to have been constructed at this time. These structures represent the last major period of construction at the Mt. Gleason facility. The Mt. Gleason launch pad is located along a nearly south to north access. It is on a prominent knoll and the site slopes upwards from the south to the north. The site is covered with three missile storage facilities with associated launch pads, access areas and ground electrical units. Each pad has a double elevator door opening with a variety of launch units extending to each side, left and right, of the elevator. Each unit also has several ventilator shafts and a single double door main entry with a single escape hatch. Each of the major entries are covered by heavy metal doors which have counter-weights for ease of opening and closure. The architecture of the camp is strictly utilitarian utilizing primarily concrete block, but having some woodframe construction. It is interesting, however, in that the roofs on this particular site are steeply sloped in order to prevent snow build-up during the winter months. (See Figures 21-25.)

The Mt. Gleason administration and launch areas are substantially intact. The radar observation facility site is located approximately 1.5 miles west of the launch site and housing complex compound. The site consists of a concrete/metal platform with two associated water tanks and a block house. Other structures, which included a barracks and associated support structures, have been demolished. (See Appendix for a complete list of facilities and structures existing at the time the Army abandoned the site.)

Deactivation

Deactivation of the Mt. Gleason site by the Army was completed on July 1, 1974. At this time the Forest Service was granted an immediate right-of-entry to protect the property from vandalism until the special use permits were terminated by mutual agreement. The sites' closure was the subject of extensive negotiation between the Forest Service and the Los Angeles District Corps of Engineers following the public announcement of the closure in February 1974. Briefly, and as summarized by John Houston, Chief Real Estate Division, Los Angeles District, the problem was threefold:

> Regional Forest Service officials (Angeles National Forest) initially demanded complete site restoration as provided for in the permits cited in para. 1, above. The Forest Supervisor claimed this posture was dictated by the costly experience gained over several years in restoring forest lands relinquished at the time LADA NIKE sites 09, 94 and 98 were closed.

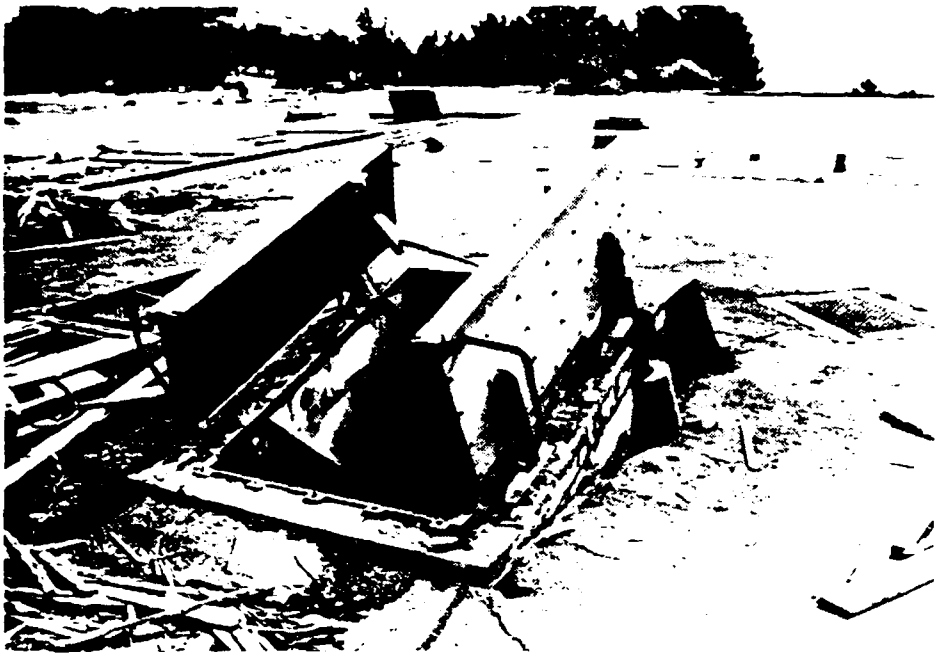


Elevator doors at Mt. Gleason launch facility.

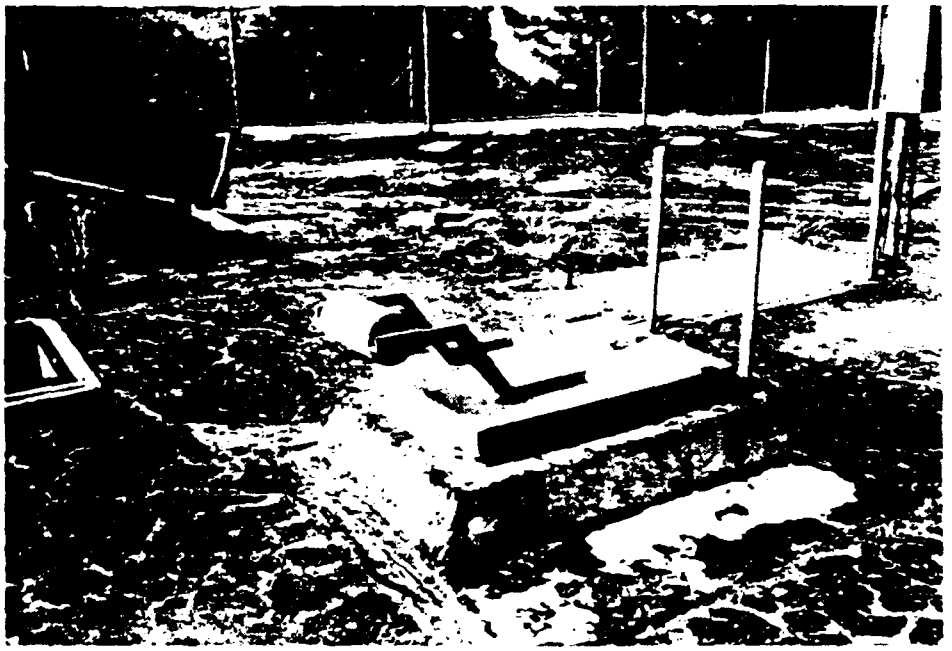
Marker designating launch battery Alpha at Mt. Gleason.

Mt. Gleason Nike Site

FIGURE 21



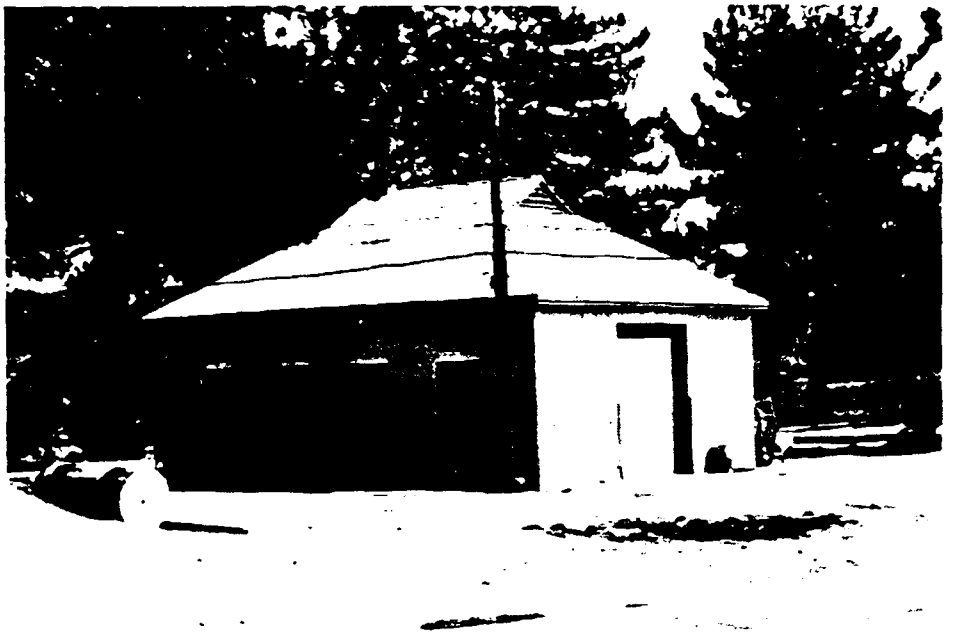
Double door personnel entry access doors with elevator doors and launch pad in background at the Mt. Gleason facility.



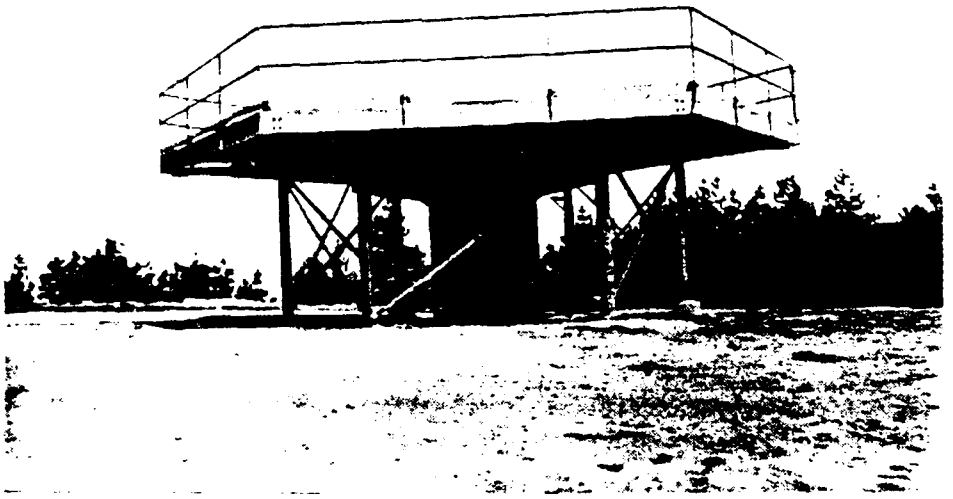
Escape hatch cover, Mt. Gleason facility.

Mt. Gleason Nike Site

FIGURE 22



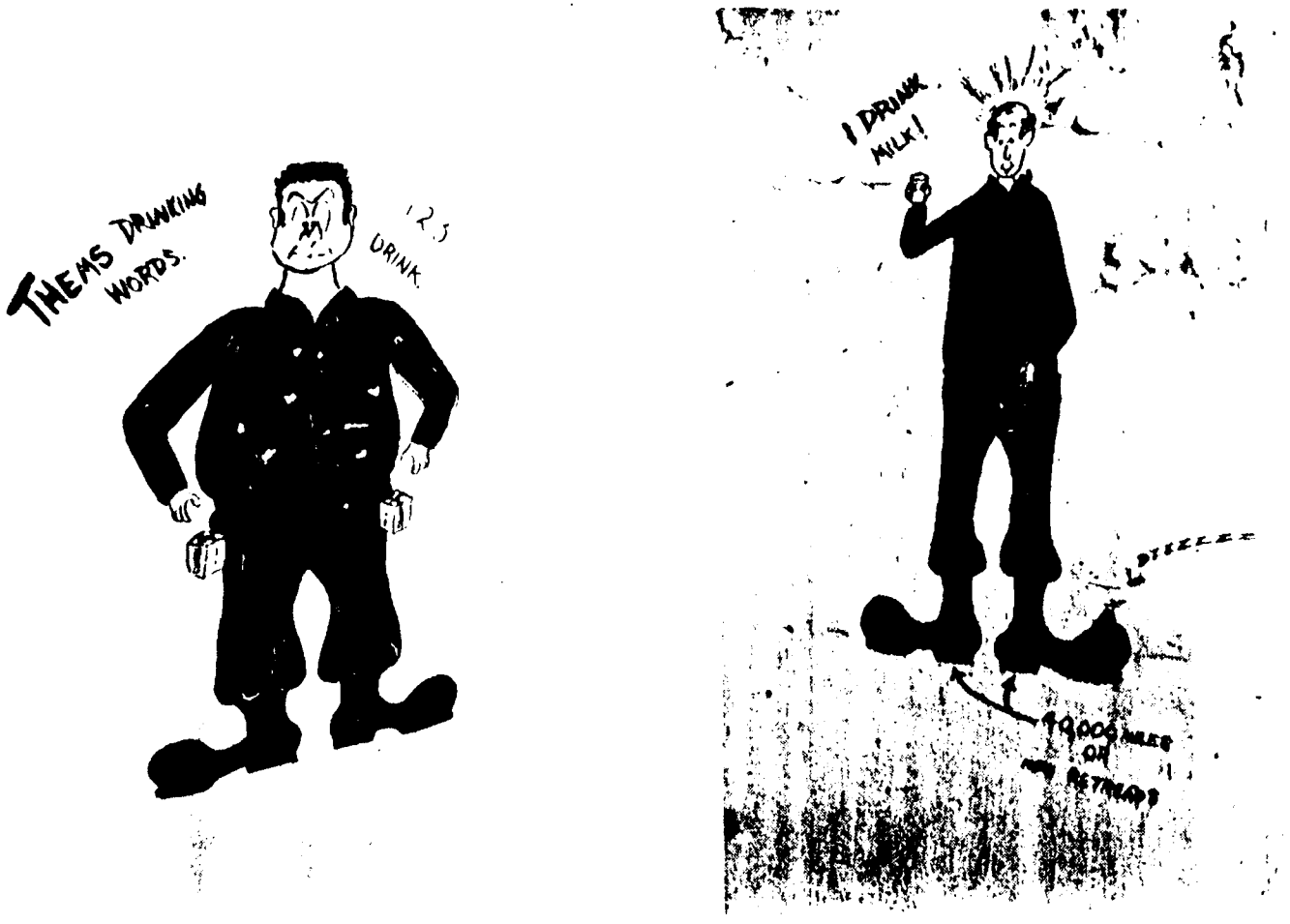
Fire station at Mt. Gleason. The concrete block construction with high pitched roof is typical of all the Mt. Gleason support structures.



Radar platform at Mt. Gleason

Mt. Gleason Nike Site

FIGURE 23



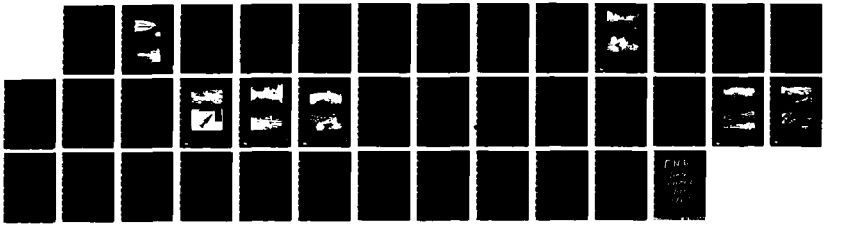
Nike period military folk art at the Mt. Gleason launch facility.

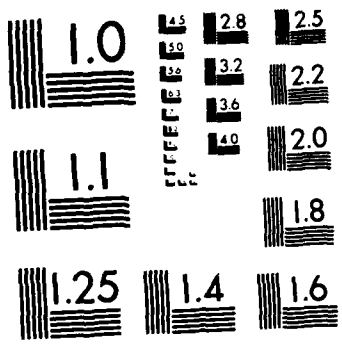
Mt. Gleason Nike Site

FIGURE 24

AD-A185 517 HISTORICAL CULTURAL RESOURCES SURVEY AND EVALUATION OF 2/2
THE NIKE MISSILE S (U) WESTEC SERVICES INC SAN DIEGO
CA R HATHEWAY ET AL FEB 87 DACA09-85-D-0065

UNCLASSIFIED F/G 15/3.2 NL





Additional Nike period military folk art at the Mt. Gleason launch facility.

Mt. Gleason Nike Site

FIGURE 25

> Responsibility for compliance with the National Environmental Policy Act of 1969 has been accepted by the District Ranger and no statement has been prepared by this District to assess environmental impacts attritutable to our proposed disposal plan. However, it is to be noted that potential beneficial impacts that may accrue to the said disposal plan will include enhanced aesthetics over the present conditions, the ability of the area to provide more recreational facilities, and the ever present factors of health and safety for the very young people who may make use of these resources. Commitment of the Firing Control land area to any use other than that of the existing Forest Service development plan will require commitment of the resources which may exist within that land to possible detrimental uses. If properly mitigated, the adverse effects will be reduced, if not eliminated; and to some extent the contextual relationships of the Firing Control Area to the Administrative-Launcher Areas would be greatly enhanced.
>
> The cited permits provide that the Army shall remove the improvements from the forest lands, provided that funds for such purposes are available. Preliminary estimates and our past experience indicate that removal costs shall be in excess of $150,000 over the salvage values. (COE: Houston, August 16, 1974)

In review, the Forest Service believed that their experience with the closure of Barley Flats/Mt. Disappointment, Magic Mountain and Los Pinetos had been a financial burden to them. Second, the passage of the National Environmental Policy Act seriously complicated the closure of the site from the Army's standpoint as it gave the Forest Service considerable legal leverage. Third, the Army and the Corps were in the apparent position of not having adequate funds for complying with Forest Service demands for removal of all improvements. Negotiations proceeded slowly. Six months later in February 7, 1975 letter to the Forest Service, W.E. Franklin, Acting Chief, Real Estate Division of the Los Angeles District, redefined the Corps position. He writes,

> Pursuant to authorities contained in the Federal Property and Administrative Services Act of 1949, 63 Stat. 377, as amended, specifically paragraph (c) of Section 203, the delegation of authority to the Secretary of Defense from the Administrator of General Services, 41 SFR-101-47.601, and the redelegation of such authority from the Secretary of Defense to the Military Departments, the improvements, but not necessarily limited to only those improvements as shown on the attached "Exhibit A," Transfer and Acceptance of Military Real Property,

DD Form 1354, are hereby transferred to the Department of Agriculture, Forest Service, without reimbursement, effective as of 8 August 1974.

The land lease cited in paragraph d. above, as listed on "Exhibit A," is included in the properties being transferred. The Forest Service assumes responsibility for all obligations and commitments accruing to the Government by reason of that said land lease.

It is requested that the transfer be acknowledged on three copies of this letter of transfer and on three copies of "Exhibit A," and that all these copies be returned to the District Engineer for our continuance of action. The original and one copy may be retained for your record purposes.

It is expressly agreed that the Forest Service waives all demands for the removal of the improvements and restoration of the said permitted lands to a condition as good as that which existed at the time the Army took possession.

In brief, the Army's position was that it would proceed in much the same manner that it had in the closure of the other Angeles Forest Nike installations. In a March 1975 response, Acting Forest Supervisor, J.D. MacWilliams, notes that a number of points which were raised by Franklin were unacceptable. They were:

1) Your occupancy and use of National Forest lands as authorized by various special use permits does not transfer title of these lands to your Department. Therefore, it is inappropriate to consider them excess and should not be referred to as excess lands. These lands will continue to remain under the management of the Department of Agriculture.

2) Relinquishment of the Improvements and your special use permit as of August 8, 1974 is not acceptable.

We believe your Department should complete the demolition of certain structures at the Firing Control Area before we can terminate your permit. Your efforts to secure necessary funding for this are encouraging and hope you can proceed as soon as possible with demolition.

3) We will accept relinquishment of your improvements when the above conditions have been complied with.

4) After reexamining the land lease No. DACA09-5-73-134 Edmund Rich, et al, we do not

> wish to accept the conditions of this lease under any circumstances. We have good reason to believe that any future use of the Mt. Gleason area can be accommodated without this lease. In addition there is serious question about the physical location of your improvements. Some of the developed water resources appear to be on National Forest lands but included in your lease. The financial obligation and commitments of this lease appear excessive in terms of the benefits from the lease. Therefore, you should proceed to deal directly with your leasee in terminating your lease. Any action involving possible disturbance of National Forest lands would need prior approval of the Tujunga District Ranger. (COE: MacWilliams, March 1975)

Ultimately, the Army complied with the majority of the Forest Services requests, and contractor's were hired to complete restoration work. On June 29, 1976, Forest Supervisor, William T. Dresser, notified the Army Corps that it would terminate the permits following completion of the work as it had been found to be satisfactory. Work was completed on August 31, 1976, terminating the special use permits.

In summary, the acquisition and construction history of the Mt. Gleason Nike site is of considerable interest. Principally, it clearly illustrates the dynamics of the relationship between the U.S. Army and the U.S. Forest Service. The Forest Service had originally granted the Army access to the site without the actual issuance of a special use permit. This was probably both a function of a genuine national awareness of the need for air defense and inexperience on the part of the Forest Service in dealing with large scale military projects. Clearly, during the nearly twenty year period of the Army's occupancy of the Mt. Gleason site, national interests had taken on an environmental awareness expressed in Federal legislation that had not been strongly defined in the mid 1950's. Such changing interests are powerfully expressed in the history of the Mt. Gleason site; as the longest operating Nike installation in the Angeles Forest, it was subject to the full range of impacts.

BARLEY FLATS

Acquisition

Land for the Barley Flats Nike installation (LA-09-L) was acquired, like all sites in the Angeles Forest, under a special use permit allowing the Army use of Federally owned land. In a November 22, 1954 letter addressed to the District Engineer, Commanding General Francis M. Day of the 47th AAA Brigade summarized the Army's position on acquisition.

> LA-09-C and L; Mt. Disappointment. The entire site is located on Federally owned land, a part of the Angeles National Forest. The Control Site is located on a high bald peak. No restrictive easement for line of sight purposes will be required. No

removable mask exists. Some access road easement will be necessary. The Launcher Site is located at Barley Flats in a fairly heavily wooded area. Some timber clearing will be necessary. This must be coordinated with the U.S. Forestry Service.

Briefly, the site was seen as ideal for it required no restrictive easements or mask areas, and it was for these reasons that the Barley Flats site was included in the December 8, 1954 directive signed by Under Secretary of the Army, John Slezak.

Negotiations with the Forest Service, Department of Agriculture proceeded quickly, and application for a special use permit was made by the Corps of Engineers on May 17, 1955. On July 20, 1955 permit number LA-891 was signed by Clare W. Hendee, Regional Forester, and it was forwarded to the Los Angeles District Corps of Engineers for countersignature. On July 26, 1955 contracting officer Harold Spickard signed the permit, clearing the way for construction at both the Barley Flats launcher area and the control site at Mt. Disappointment. Conditions set forth in the permit were:

18. The Army is hereby authorized to make full use of Forest Service improvements within the special use area or in gaining access to the area. Where major betterment, reconstruction or maintenance work is necessary on existing access roads or roads within the area, such work shall be carried out under a supplemental permit or written agreement.

19. The Army shall exercise reasonable care to prevent soil erosion caused by the removal of plant cover or otherwise. The Army shall currently abate and repair erosion caused directly or indirectly by its operation.

All earth constructed fill slopes will be treated as follows:

(a) Face of each fill slope will be shaped to angle of repose for soil type involved.

(b) When the fill ends on a slope which is greater than the natural angle of repose of the material of which the fill is composed, the toe of the fill shall be structurally stabilized.

(c) The longer, more critical slopes as designated by the Forest Service shall be wattled and planted in

accordance with specifications to be furnished by the Forest Service.

20. The Army shall take all reasonable precautions to prevent fires and diligently to undertake suppression action in the event of fire resulting from the exercise of the privilege herein granted.

21. A fire plan outlining prevention, presuppression and suppression measures adequate to cover the risks and hazards of this use shall be prepared and placed in effect by the Army. This plan, when approved by both the Army and the Forest Service, will be attached to and become a part of this permit. It is expected that all personnel working on the construction, maintenance or operation of this project will comply with all conditions of the plan.

22. The Army shall have the right during the existence of this permit to install facilities, to construct such roads, trails, firebreaks, buildings, pipelines, telephone lines, and/or any other construction as may be deemed necessary by proper military authority, to permit the full utilization of the area for military protection purposes.

23. Prior to construction of any of the above-mentioned improvements or facilities, the Army will consult with the Forest Service so that the construction specifications may correlate with the Forest Service plans so far as consistent with the Army's use of the area.

24. This permit may be revised or terminated at any time by consent of both parties. The facilities, buildings or other construction placed in or upon, or attached or serving said area may be removed at any time. All such facilities and improvements shall be removed within one year after termination of this permit. If not removed within this period the improvements will revert to the U. S. Forest Service.

25. The Army may cut such timber or other vegetation as the Army may deem necessary for full use of the area. However, considering the limited acreage of usable timber land in this area and future need for such lands for recreation and other purposes, the Army shall make every effort to plan developments that will require the minimum

removal of timber. Prior to removal of any timber the Army will contact the Forest Service and arrange to review the cutting program on the ground. The Forest Service will so far as possible dispose of the timber to a commercial logger who will cut and remove all merchantable material. Slash resulting from the removal of trees and vegetation shall be disposed of as directed by the Forest Officer in charge.

26. The Army may issue such additional rules and regulations as are needed for proper control of public use on the lands under permit. The lands affected by such rules and regulations shall be adequately posted by the Army so that the public may be fully informed of the restructions.

27. Nothing in this permit shall require the performance of work or services or the expenditure of funds by either party unless appropriations for that particular purpose are available.

28. Forest Service representatives shall have access to the area subject to this permit and shall have the right to inspect for compliance with the terms of this permit.

29. During the period of construction the permittee shall finance the direct and indirect costs of maintaining a fire warden on the job. The fire warden shall be an employee of the Forest Service and reimbursed by the Corps of Engineers on an installment basis in such amounts as may be necessary to maintain the financial integrity of Forest Service funds.

30. In consideration of the privileges granted by this permit, the Army does hereby stipulate and agree to conform and abide by the regulations and conditions contained herein.

Clearly, the original permit was largely non-restrictive. The only major considerations made were with regard to the cutting and disposal of timber. Three special use permits were eventually issued, and they were progressively restrictive. For example, a permit for water pipelines and sewage systems was signed by the Forest Service on October 18, 1955. It was countersigned by the Corps of Engineers on December 2, 1955. It contained 32 special conditions, and even regulated the color (brown or dark green) that the pump station could be painted. Additional acquisition permits for access roads were signed as late as February 1957, and the final audit was conducted by the Corps of Engineers in November 1958.

Construction

No construction records were located for the Barley Flats site. A general idea of the construction history can, however, be created from an analysis of the special use permits.

The original special use permit was signed in July of 1955. This authorized general access to the site, and it is likely that construction began in late summer of 1955. This would primarily have involved the building of access roads to the construction sites and establishing a temporary site office. Actual construction of buildings and amenities could not have begun until early 1956, for the permit for constructing water pipelines was not signed by the Corps of Engineers until December 2, 1955. An additional permit for a 3-inch water main was signed on June 15, 1956, and was later amended in October of 1956 and May of 1957. A final special use permit amendment was granted in August of 1958. It appears, therefore, that the bulk of construction at the Barley Flats site was completed in 1956, and that the site was activated either late in 1956 or early in 1957.

The construction of nearly all buildings including barracks, storage sheds, a generator building, mess hall, sentry and control boxes, a missile assembly and test building, a ready room, and a motor pool building was carried out in concrete block. The three underground missile storage structures were built of monolithic concrete. No major changes were made to the Barley Flats (LA-09-L) site following initial construction, apart from the previously mentioned special use permit for additional waterlines in 1958.

The overall site was built in three facilities: 1) the missile launch site, 2) a barracks and administration area, and 3) a control area. Due to present use of the barracks area by L.A. County Correctional facility access was restricted for the purposed of this study. Structures appeared to be very similar to the Mt. Gleason facility which were constructed of concrete block with high pitched roofs (see Figure 26).

The missile launch site is similar in configuration to other Nike bases, and consisted of three batteries located on a small plateau on the highest point of the ridge. Concrete block structures, which may be later additions, have been built over ventilation and access hatches (see Appendix for a complete facilities list).

Deactivation

Plans for the deactivation of the Barley Flats site were made late in 1961 as part of a more general disposal program of Nike installations. A November 7, 1961 letter to the Chief of Engineers, Department of the Army, Washington, D.C., from Donald Black of the Real Estate Division notes,

> 1. The Air National Guard has determined there is no requirement for NIKE Sites LA-14 and LA-98. However, they do have a requirement for the 12 acre control area of NIKE Site LA-09, as stated in the basic letter. The requirement includes

Lower launch site at Barley Flat. Note the concrete block structures added when the silos were converted to civil defense facilities following closure of the Nike base.

A typical support structure at Barley Flat.

Barley Flat Launcher Area

FIGURE 26

utilities and access road necessary to the utilization of this control area, as indicated on attached drawings.

In brief, the launcher site at Barley Flats was not required for any use, but the control site would be used by the National Guard. Negotiations for disposal of the Barley Flats site had actually begun earlier. A May 1, 1962 letter from John J. Shipley to the Forest Service summarizes the entire range of deactivation proceedings. He notes,

> Pursuant to your request in letter of 29 September 1961, and under authority contained in the Federal Property and Administrative Services Act of 1949, as redelegated by General Services Administration to this office, the buildings and improvements shown on Exhibit "A", attached to and made a part of this letter, are hereby transferred to the United States Department of Agriculture, Forest Service, without reimbursement, effective as of 1 May 1962.
>
> Subject buildings and improvements are located on the Administrative and Launcher Area (Barley Flats), NIKE Battery Site LA-09, used by the Department of the Army under Special Use Permit LA-891, dated 23 November 1955. Said permit is to be terminated as of 30 April 1962 and a new permit granted, effective 1 May 1962, to cover the retained area. Special Use Permit LA-1069, dated 27 February 1956, covering access roads, is to be amended to delete the access road for the Launcher and Administrative Area (Barley Flats).
>
> Inclosed is ENG Form 290, which transfers the property accountability of the buildings and improvements from the Department of the Army to the United States Department of Agriculture, Forest Service. It is requested that the form be executed and dated by the person authorized to accept property accountability and that two fully executed carbon copies be returned to this office. It is also requested that the transfer be acknowledged on a copy of this letter and that same be returned to this office.

Station lists imply that the Army had closed the facility prior to Shipley's letter, but the actual disposal of it and the termination of the special use permits would take another year.

The Forest Service responded to Shipley's letter on Mary 6, 1963, noting that they had reviewed his requests and that they agreed to terminate all special use permits with the exception of the original one dated in July of 1955. On May 24, 1963 the Forest

Service sent another letter to Shipley,

> Pursuant to paragraph 24 of special use permit referred to as permit LA 891 Mt. Disappointment (Barley Flats), said permit is hereby terminated, effective upon signature by your authorized officer in the space provided below. A new permit will be issued to authorize the few uses that are to be continued.

On June 15, 1963, Shipley signed the letter to complete the deactivation and disposal of the Barley Flats site.

In summary, the Barley Flats installation was one of the shortest lived Nike sites in the Los Angeles Defense Area. The reasons for this are not contained in any documents relating to the site. It is clear, however, that the Army considered the site unsuitable for conversion from Ajax to Hercules Missiles.

LOS PINETOS

Acquisition

Land for the Los Pinetos Nike installation (LA-94-C&L) was acquired, like Barley Flats and Magic Mountain/Lang, under a special use permit allowing the Army use of Federally owned land. In a November 22, 1954 letter addressed to the District Engineer, Commanding General Francis M. Day of the 47th AAA Brigade summarized the Army's position on acquisition. He notes:

> c. LA-94-C and L; Los Pinetos. The entire site is located on Federally owned land, a part of the Angeles National Forest. No restrictive easement for line of sight purposes is necessary. Some removable mask in the form a 12 inch to 30 inch coniferous trees exist in the vicinity of the Control Site. These trees must be removed and their removal must be coordinated with the U. S. Forestry Service. Some access road easement and water line easement will be required.

Day's letter was drafted in response to a summary review of the site prepared by the Los Angeles District Engineer on November 15, 1954. A siting team consisting of various experts on foundations, roads, electrical equipment, and water, including a representative of the 47th AAA Brigade, had visited the site on September 27, 1954. Their visit was prompted by a July 14, 1954 directive to conduct surveys of Los Angeles Defense Area Nike sites. Their report concluded that "from an engineering standpoint,

no major problems are anticipated. The sites are considered feasible for construction of the proposed facilities." They did, however, note that developing a water supply would be difficult.

> All sources of water are quite removed from the site and will require installation of a pipeline over difficult mountain terrain. The Los Angeles City System is the most reliable and could be reached by a pipeline approximately two miles in length. This supply would require pump stations to lift the water approximately 1300 feet. The Los Angeles City System could also be tapped at the Veteran's Administration Hospital approximately 2 1/2 miles distant.
>
> Information obtained from a local rancher indicated a well had been drilled in Los Pinetos Canyon in the year 1900 at elevation 1900. Total depth of this well is 1000 feet with 12 inch surface casing with rock hole. The well has recently produced 5 GPM with only 6 foot draw down with immediate recovery upon stopping the pump. This well is approximately 1 1/4 miles northeast of the launcher site and approximately 1100 feet below the site.

It is interesting to note here that the report concluded that "from an engineering standpoint" there would be no problem. Cost was, therefore, apparently not a consideration at the Los Pinetos site, for although the provision of water would be difficult and expensive that was not "an engineering" problem.

Day quickly updated his November memorandum by making a formal request to the Commanding General of the Western Army Antiaircraft Command at Fort Baker for the acquisition of the site. His January 4, 1955 letter also provides a good description of the site prior to construction.

> 1. Request authority to acquire the areas shown on inclosure 1 and 2 for use as a NIKE battery installation.
>
> 2. The entire site is located on government owned land, a part of the Angeles National Forest. LA-94-C (EJBE 350215) is at elevation 3945, on a fairly sharp ridge. Three major fingers extend north and west from the top, and the use of all three ridges will be required to site dual control equipment. The primary sector is mask free. The secondary sector has masks to a maximum of 32 miles.
>
> 3. An administrative area site has been located at a lower elevation on the same hill mass as LA-94-C, and contiguous to the access road.

4. LA-94-L (EJBE 348212) is at an elevation of 3,000 feet, 1450 yards west of the control area, and along a long narrow ridge. The latter statement will necessitate the use of a non standard launcher area, however space exists for six magazines.

5. Access to both areas is over unpaved fire roads. Some road improvement will be required prior to site occupancy.

6. Radar testing of this site will not be feasible prior to spring, as no road maintenance is performed during winter months. At the present time, access is gained by 1/4 ton truck, only.

On January 7, 1955 a formal request was made by Fort Baker to the Commanding General, Army Antiaircraft Command at Colorado Springs. The request was approved on January 21, 1955 with the notation that acquisition should proceed "without delay."

> Expedited acquisition procedures prescribed by message DA935870, Department of the Army, G4, 7 April 1953, are authorized, if deemed necessary, and will be coordinated with the appropriate District Engineer.
>
> A request to the appropriate District Engineer for engineering designs and construction cost estimates is authorized. Immediate attention will be given to assisting the Engineer in final location of the site so that design and final acquisition may proceed without delay.

On January 25, 1955 a request was made to the Commanding General of the Sixth Army to "take appropriate action to have the District Engineer, Los Angeles District, acquire a real estate interest" in the Los Pinetos site. On February 5, 1955 the Headquarters Sixth Army made the final request to the Division Engineer, South Pacific Division, Corps of Engineers with a copy sent to Los Angeles. It notes, simply that:

> It having been established that a military necessity exists for the acquisition of an appropriate interest in the real property identified in the preceding correspondence, it is requested that action be initiated toward its acquisition.

Negotiations were soon opened with the Forest Service, but it was not until September 21, 1955 that special use permit number LA-906 was signed. The special conditions of the permit were substantially the same as those for Barley Flats. Additional conditions were, however, placed on the Los Pinetos site. These were:

> Any roads constructed within the defense site areas which have grades in excess of 6% will require

advance approval from the Forest Supervisor. Such approval will be based upon a report which conclusively shows that the route selected and grade and other design features proposed for the road are consistent with the objectives of good watershed management. This provision will be waived if the roads are paved, drainage facilities are adequate, and discharge from drainage structures is properly handled.

Provisions will be made to protect all road slopes from erosion.

Where drainage from paved areas and/or roads is collected in drainage structures provision will be made to protect the existing Forest Service road from damage due to the increased flow of water.

Prior to construction of any of the above-mentioned improvements or facilities, the Army will consult with the Forest Service so that the construction specifications may correlate with the Forest Service plans so far as consistent with the Army's use of the area.

The Forest Service truck trail shall be open at all times for through travel by the Forest Service, cooperating agencies or forest users on authorized forest business.

Clearly, the Forest Service was concerned about the use and maintenance of existing road surfaces, and this may account for the delay between the February 5, 1955 authorization to acquire the land and the actual signing of the permit on September 21, 1955.

Construction

No construction records exist for the Los Pinetos site. The installation is, however, unusual in that the launch area, barracks and administrative area, and control area are located together in a rather limited geographic setting and within a direct line-of-sight of each other.

It is likely that construction began with the simultaneous improvement of the road surfaces and the development of a suitable water supply. The existing roads, as noted in General Day's January 4, 1955 letter, were inadequate as access could only be gained by using a 1/4 ton truck. Actual construction probably began immediately following the September 21, 1955 signing of the special use permit, with the bulk of construction occurring in 1956 following the provision of an adequate water supply. The buildings at the installation are largely constructed of concrete block, and the site consists of 3 components: 1) missile launching site, 2) barracks and support structures, and 3) a radar facility. The barracks-housing is located on a low point between the launch pad site and the observation area which are located on plateaus along a ridge extending essentially

from east to west. The barracks complex consists of an office unit, fire station, heli-pads and dormitories. They are constructed of concrete block with either shed or shallow pitched roofs. Structures have been aestetically detailed with flagstone and cobble rockwork. (See Appendix for complete facilities list.)

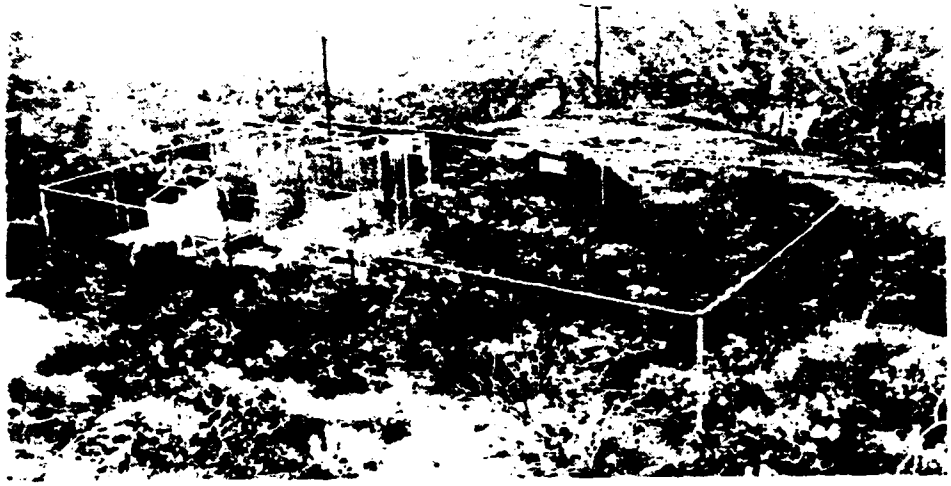
The radar facility is located on a plateau at the far western end of the complex. It consists of several concrete block structures and a metal grate heli-pad, as well as several radar dome platforms. One platform appears to be intact and is now in use as a microwave telephone receiving station.

The launch site is located on a plateau on the extreme eastern end of the site complex. There are three sections at the launch facility. They are similar in configuration to those located at White Point and Mt. Gleason; with large rectangular elevator/silo doors, twin door personnel access with associated escape hatches and ventilators. Missile storage and launch pads are constructed of poured concrete with asphalt pavement covering the remaining area. Associated guard house and support structures are built of concrete block. The launch site at Los Pinetos is unique in that each of the 3 battery units is largely intact. Unit C is particularly complete with bunks and auxiliary equipment still in place including gas filters, ventilators, electrical machinery, fire equipment, and signage. The overall integrity of Los Pinetos is excellent. The majority of the original structures remain standing, and the launch and radar facilities are in an excellent state of preservation (see Figures 27, 28, and 29).

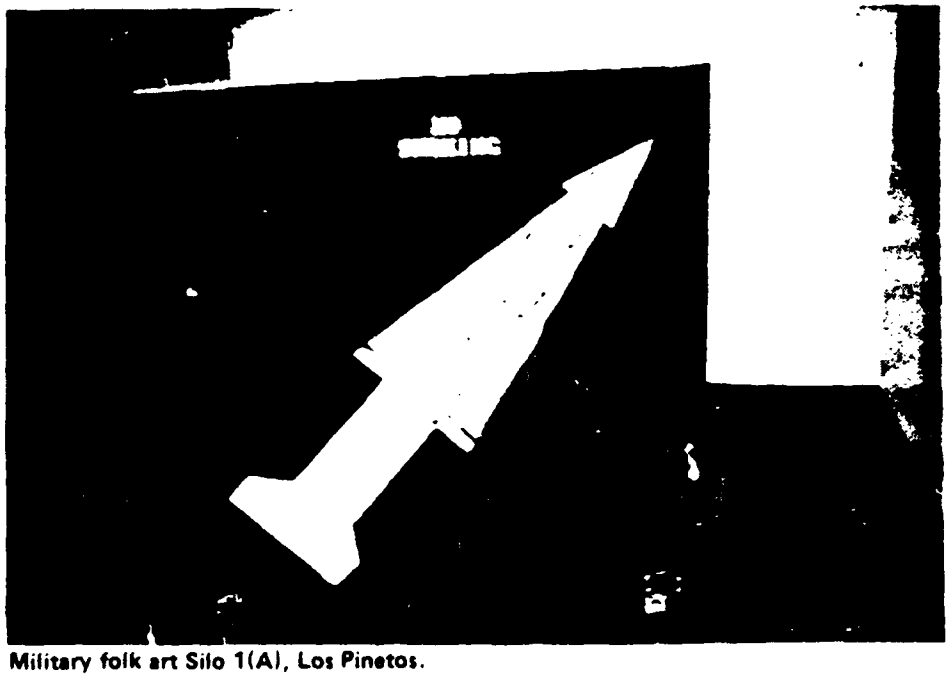
The only amendment to the original special use permit was approved by the Forest Service on March 16, 1961. This was made to allow the Army to acquire an additional 0.37 acre parcel for "new canine kennels in connection with conversion of Nike facilities from Ajax to Hercules" missiles. This permit indicates that some additional construction took place at Los Pinetos in 1961 including additional fencing, and radar control facilities associated with conversion to a Hercules capable site.

Additional building history associated with Los Pinetos includes the 1958 construction of the first units of family housing in the Los Angeles Defense Area. These were located at 25600 Sand Canyon Road, Saugus, and consisted of an 8.27 acre site. A government bid request for sale of the property in 1977 describes it as:

> The housing site contains 32 3-bedroom, 1 1/2 bath, wood and stucco units. Each house has a 40-gallon water heater, a Holly Airtrol heater, a mounted air cooler, a covered carport, and a storage shed, 3.5' by 6'. The walls of the houses are painted plasterboard. The floors are concrete with asphalt tile covering. The kitchens each have a double sink with metal cabinets.
>
> Other improvements include playground equipment, roads, sidewalks, two steel petroleum tanks, electrical distribution systems, gas lines, sewer system, drainage, fencing, and a brick wall. (GSA Request for bids June 7, 1977.)



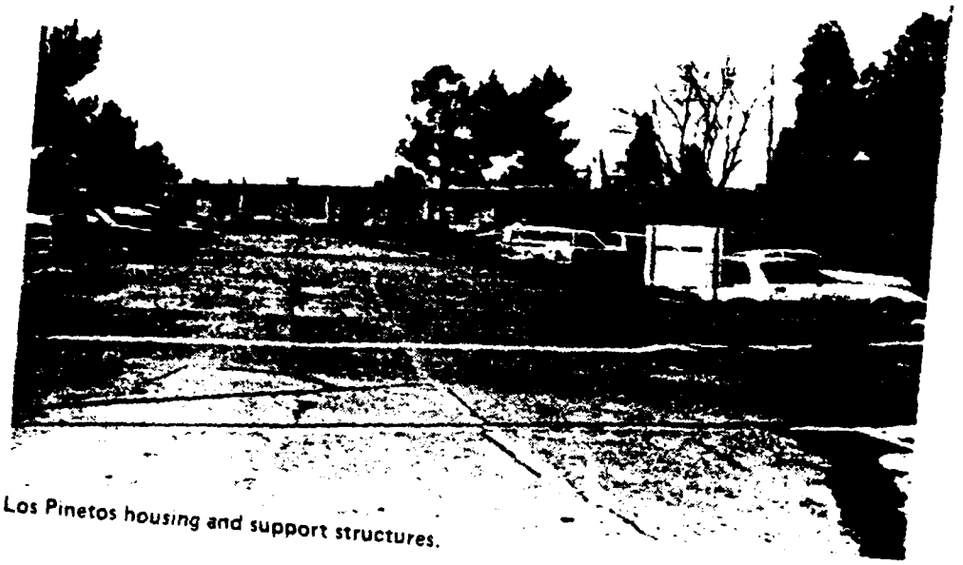
Dog Kennels, Los Pinetos launch facility.



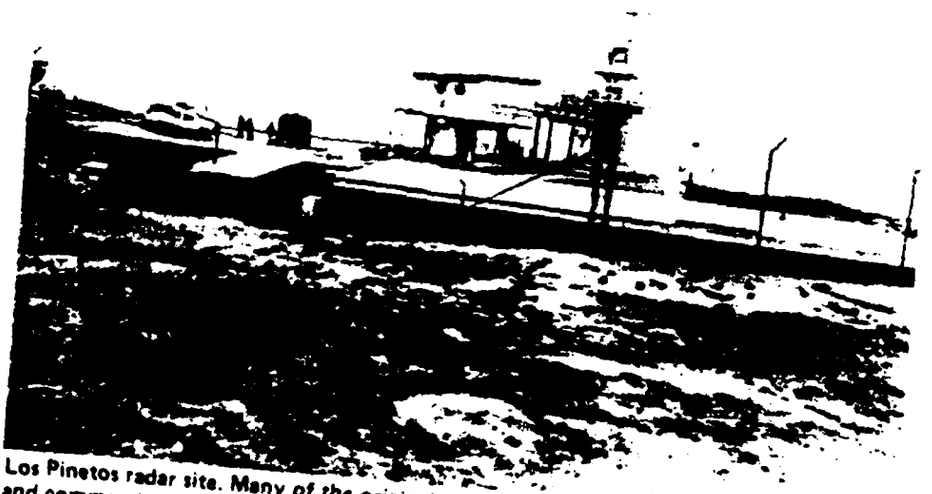
Military folk art Silo 1(A), Los Pinetos.

Los Pinetos Nike Site

FIGURE 27



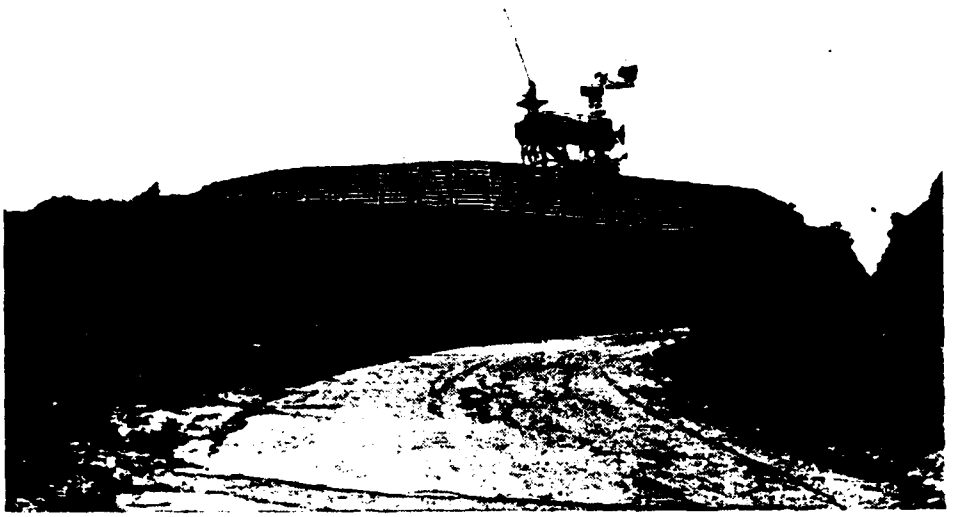
Los Pinetos housing and support structures.



Los Pinetos radar site. Many of the original concrete block structures and command dome remain intact.

Los Pinetos Nike Site

FIGURE 28



Retaining wall at the Los Pinetos launch site.

Los Pinetos launch facility overview, showing personnel access doors, escape hatch, and double elevator silo doors.

Los Pinetos Nike Site

FIGURE 29

The family housing units, although not a feature of the present study, are an important feature in the overall construction history of the Los Pinetos Nike installation as they represent the Army's first attempt in solving housing problems associated with remote area Nike bases. Most importantly, the housing allowed for the deployment of married personnel into areas where they had not previously been utilized.

Deactivation

The Los Pinetos site was under deactivation by the Army in the summer of 1968. The excess property report, however, was not prepared until July 11, 1969 (see Appendix). In an August 11, 1969 letter from A. D. Stanley to the District Forester, Angeles National Forest, the formal request for transfer of the property was made. Stanley notes:

> a. Special Use Permit, our No. LA-906, issued by the U. S. Forest Service on 21 September 1955 to the Department of the Army, granting the conditional use of approximately 100.00 acres of land for the construction and installation of the necessary facilities and improvements for the military protection of Los Angeles and adjacent territories, on land described specifically within the said permit but located on Los Pinetos Mountain, Los Angeles County, California.
>
> b. Amendment No. 1, dated 16 March 1961, to the said permit providing for the use of an additional area of approximately 0.37 acre of land, described more specifically within the amendment but situated contiguous to the area acquired under the said permit.
>
> As provided for in Army regulations, the permitted lands and the substantial improvements constructed by the Government thereon, together with all other minor interests therein, have been declared excess to the requirements of the military departments, and acceptance of this letter of transfer shall constitute relinquishment of the said lands by the Army.

The letter was countersigned by the Forest Service on August 29, to complete the deactivation and disposal of the Los Pinetos Nike installation.

In summary, the acquisition and construction history of Los Pinetos (Nike LA-94-C&L) is of interest for several reasons.

1) Early acquisition records (January 4, 1955 - February 5, 1955) clearly indicate both the speed with which the Army could transmit information and expedite the acquisition process when necessary. It is also an

excellent illustration of the bureaucratic chain-of-command which had to be followed in order to obtain authorization for the acquisition of property.

2) The site is unusual in that all facilities were constructed within a line-of-site area. All other Angeles Forest Nike bases had launch control areas in more remote areas, as was more typical of Nike bases nationwide.

3) The lack of consideration for the cost of supplying water to the base is a particularly interesting feature, reflective both of the urgent need to establish an air defense system and the need to site installations in optimum locations. The water line constructed was in fact a major focal point of the deactivation and disposal process in consultation with the Forest Service. It was, and has since proven to be, a major asset in the prevention of forest fires in the region.

MAGIC MOUNTAIN/LANG

Magic Mountain (98-C) and Lang (98-L) were originally known only under the installation name Magic Mountain. When the launch control area (98-C) was abandoned the installation eventually became known only as Lang (98-L).

Acquisition

Land for the construction of the Magic Mountain/Lang Nike installation was acquired both under special use permits from the Forest Service, and from the purchase or easement of private property. On November 22, 1954 Commanding General Francis M. Day, 47th AAA Brigade, expressed an interest in the acquisition of property noting:

> LA-98-C and L; Magic Mountain. The Control Site is located on Federally owned property, a part of the Angeles National Forest. Some removable mask exists in the nature of 12 inch to 30 inch coniferous trees. These must be removed and the removal coordinated with the U. S. Forestry Service. Access roads must be constructed and easements obtained. No restrictive easement for line of sight purposes will be necessary due to the configuration of the terrain. The Launcher Site is located on privately owned land. No removable mask presently exists, however, it is conceivable that in the future some power and telephone line development could cause a mask in this vicinity. Some access road easement will have to be obtained. It is possible that some easement for water lines will also be necessary.

On October 19, 1954 a siting team had visited both the control and launch areas. Despite severe doubts about the availability of an adequate water supply at the control site they concluded that from "an engineering standpoint, no major problems are anticipated." Again, as in the case of the Los Pinetos site, cost does not seem to have been a factor in the face of a pressing need for air defense.

In response to these needs the Undersecretary of the Army, John Slezak, recommended that acquisition proceedings begin immediately in a letter addressed to the Chief of Engineers, Washington, D.C., on December 8, 1954. Subsequently, the Headquarters Army Aircraft Command, Colorado, issued a directive authorizing such acquisition on April 14, 1955.

Action was taken by the Los Angeles District, Corps of Engineers, and on June 28, 1955 Chief of the Appraisal Branch, L. B. Otterness, summarized the acquisition process. He also recommended that Forest Service lands be the first to be acquired.

> Chain of correspondence, basic letter dated 14 April 1955 from Headquarters, 47th AAA Brigade, Fort MacArthur, California to Commanding General, Western Army Antiaircraft Command, Fort Baker, California, file reference BRS3 601, subject: "Nike Site Request, LA-98-C&L, Magic Mountain." 4th Indorsement dated 24 May 1955 from Headquarters, 6th Army, Presidio of San Francisco, California to the South Pacific Division Engineer, states that it has been established that a military necessity exists for the acquisition of an appropriate interest in the real property identified in the preceding correspondence, and requested that action be initiated towards its acquisition.
>
> Request that action be taken to obtain necessary real estate instrument from the U. S. Forest Service, covering the areas outlined on subject drawings, for so long as required for any antiaircraft purpose.

On October 31, 1955, following negotiations with the Forest Service, a special use permit was signed. The conditions of this permit were substantially the same as those set forth at Los Pinetos. Special considerations imposed at the Magic Mountain site were:

> Permission is granted to do this work subject to the following conditions:
>
> 1. Before beginning this work the district ranger located at Newhall at the above address will be notified.
>
> 2. All tractors and power equipment will be equipped with adequate spark arresters, fire extinguisher, shovels and axes.

3. Because of the high fire hazard any personnel assigned to the project who smokes, will do so only at designated areas.

The above stipulations apply to all work performed within the area. The following apply to operations on land of the U. S. Forest Service.

4. There shall be no unnecessary destruction of watershed cover.

5. No work will be done on roads leading to the site without written permission from District Ranger Berriman.

6. Soil and rock removed from any area will be stored in such a manner that it will remain on the site. (COE: Berriman, August 25, 1955)

Acquisition of lands at the launch area considerably post-dated that of land under Forest Service jurisdiction, and the finalization of deeds, licenses and easements was not completed until March 4, 1957. The acquisition process at the launch area is summarized as follows:

Final Opinion, dtd 27 Dec 1956	Deed dated 6-14-56	Albert J. Malano, et al
Final Opinion dtd 27 Dec 1956	Permanent Restrictive Easement for Safety Area from 14 June 1956	Albert J. Malano, et al
Final Opinion dtd 27 Dec 1956	Permanent Restrictive Easement for Safety Area from 14 June 1956	Albert J. Malano, et al
License No. LA-1047, dtd 4 Mar 1957	License for roadway for indefinite period from 4 Mar 1957	Southern Pacific Company
Final Opinion, dtd 24 Jan 1957	Deed dated 4-25-56	Charles G. Scharf, et al
	Permanent Restrictive Easement for Safety Area from 25 Apr 1956	Charles G. Scharf, et al

Construction

No construction records exist for the Magic Mountain/Lang installations, but a general idea of the construction can be obtained from an examination of deeds, special use permits and station lists. The issuance of special use permits is summarized as follows:

Department of Agriculture Forest Service	Special Use Permit No. LA-907, dtd 17 Oct 1955, Amendment No. 1 dtd 5-24-63 and Amendment No. 1 dtd 5-21-68.	Special Use Permit for Control & Launcher Sites and access road indefinite period from 17 Oct 1955
Department of Agriculture Forest Service	Special Use Permit No. LA-974, dtd 17 Aug 1956	Special Use Permit for water pipeline, tank, pumphouse and access trail, indefinite period from 17 Aug 1956
Department of Agriculture Forest Service	Special Use Permit No. LA-976, dtd 6 Sep 1956	Special Use Permit for transmission line indefinite period from 6 Sep 1956

Construction at the site probably began late in the fall of 1955 following the Corps of Engineers October 31st signing of the October 17, 1955 special use permit issued by the Forest Service. This permit allowed for the construction of access roads only. A permit for the construction of water lines was not issued until August 17, 1956 so it is obvious that the construction of the access road to the launch control facility (98-C) at Magic Mountain took a considerable period of time. A final permit for the construction of a transmission line was issued on September 6, 1956. This was probably issued to connect the launch and control areas as they neared completion.

Construction does, therefore, appear to have been near completion in the fall of 1956. The base was, however, probably not opened until early in 1957 as the final license was not signed until March of that year. In addition, station lists first show Army occupancy in 1957.

The construction history of the Magic Mountain/Lang site is interesting in that it took longer to build and occupy than other Angeles Forest Nike installations. This is very likely due to the fact that it was the last area to be acquired under special use permit and deed. By the time all of the land was acquired the Army already had an extensive building program underway and the Magic Mountain/Lang site probably received a lower priority.

As completed, the control site was located atop a rather barren scrub brush mountain top and consisted of two major and one minor component that included: 1) the radar observation area, now occuplied by a new microwave tower, 2) barracks and a probable command office, and 3) another smaller radar or electrical area located on a hill to the east of the complex. Today, the site has no standard Nike period

architecture, with the exception of two large water tanks. Overall, the Magic Mountain Nike site (98-C) has not retained its architectural integrity due to demolition and vandalism (see Appendix for a list of original facilities).

Lang Station Nike site (LA-98-L) is located in Soledad Canyon on the southern bank of the Santa Clara River. Access was gained by a small two lane road that connects to Highway 14. Site integrity has been severely impacted by recent construction, including the addition of concrete block walls, new structures, and vandalism. The overall site exists in 3 components: 1) the missile launch facility, 2) a barracks area, and 3) a command station with numerous associated buildings, and exercise facilities. Structures are built of concrete block. Launch silos and launch pads are constructed of reinforced poured concrete (Figures 30 and 31) (see Appendix for a listing of on-site facilities).

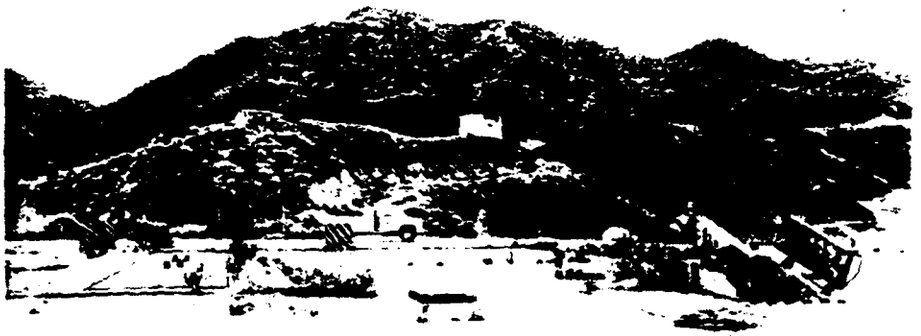
Deactivation

The deactivation of the Magic Mountain/Lang facility proceeded in three phases. The initial phase was implemented in 1961 with the planned deactivation of both the launch and battery control areas. A letter from John Shipley, Chief of the Real Estate Division, Los Angeles, to the Division Engineer, San Francisco notes:

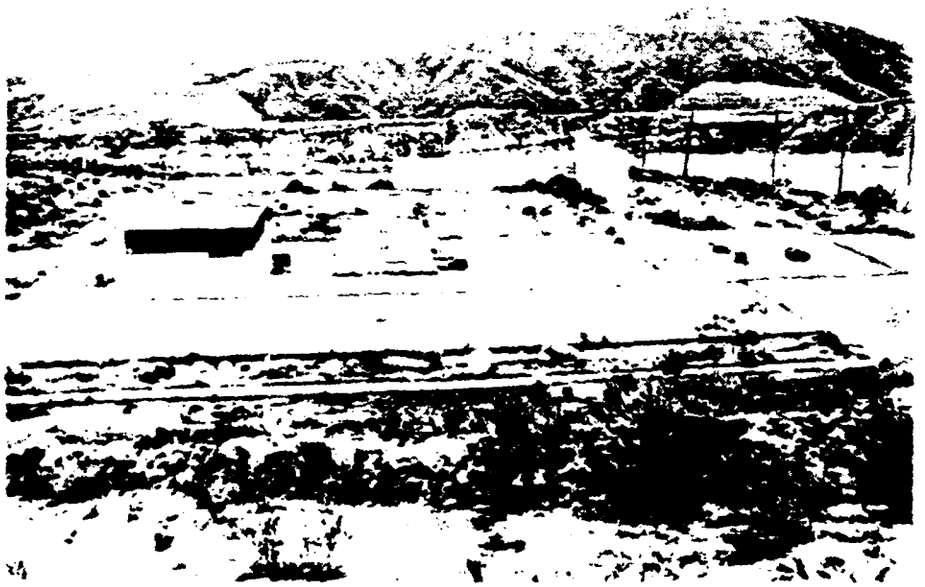
> Reference is made to Department of the Army phase-out program and 4th Indorsement from your office dated 26 July 1961, basic letter 22 June 1961, subject: Report of Excess Real Property, NIKE Site LA-98, requesting screening and submission of Eng Form 2187, and GSA Standard Form 118 for subject site, which is scheduled to be available for excess status on 31 December 1961. By message SPLRM-D 2543 dated 14 August 1961, your office was advised that screening has been completed with negative results.

He also provides an excellent description of the property.

> Improvements at this site, consisting of 22 buildings, 3 underground missile storage structures, 3 water storage tanks, roads, utilities and other facilities required for operation of NIKE Site LA-98, were constructed by the Department of the Army at a cost of $1,632,297. Of the above improvements, there are 9 buildings, 2 water storage tanks, access road to control site, 2 underground missile storage structures and a major portion of the third underground storage structure located on land occupied under Special Use Permit LA-907. Inclosed is Engineer Sketch 1123 - Site 98-L Boundary, dated 8/11/61, showing the perimeter boundary of one of the underground structures in the Launcher area, a portion of which is located on fee-owned land (Tract A-101) and a portion is located on



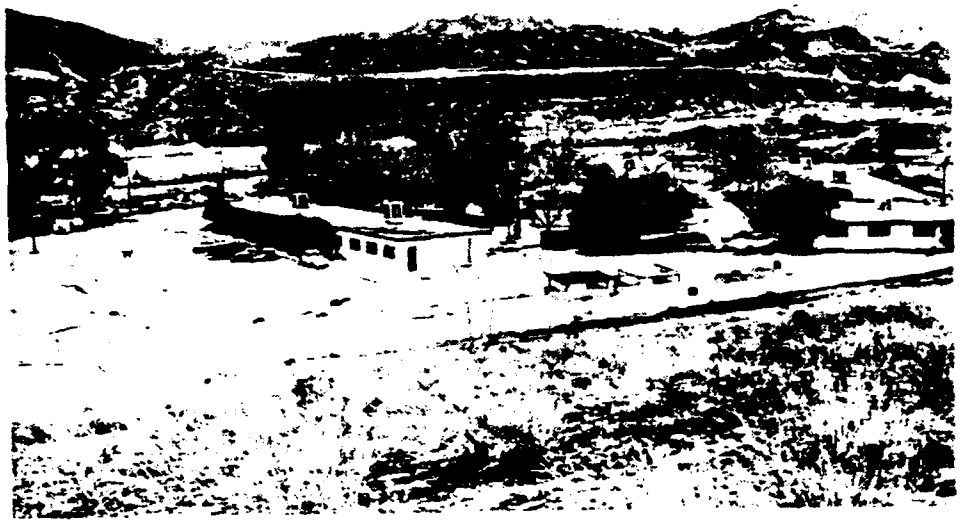
Upper launch site at Lang Station with water tank in background.



Lower launch site at Lang Station as seen from the middle launch site. Note the later additions of a small concrete block structure and large concrete block walls in background. These were constructed in the early 1970's after the installation was abandoned without the permission of the Forest Service.

Lang Nike Site

FIGURE 30



Support structures at Lang Station.

Guard house at the Main entrance to Lang Station.

Lang Nike Site

FIGURE 31

land covered by Special Use Permit (Tract A). The actual underground missile storage structure has been plotted on the inclosed drawing, which shows the major part of the structure is on permitted land, but a small porton (shaded area) is located on fee-owned land.

The second phase in the deactivation process took place from late in 1961 through the spring of 1963. The Army abandoned the launch control area in December of 1961 when 98-L was converted from Ajax to Hercules missiles, but continued to maintain the launch area at Lang Station. A decision was subsequently made, early in 1962, to continue to operate the launch area. In a letter to the Forest Service, Shipley amended his earlier recommendation. He notes in his formal request for transfer of lands:

> Subject buildings and improvements are located on the Control Area (Magic Mountain), NIKE Battery Site LA-98, used by the Department of the Army under Special Use Permit LA-907 dated 17 October 1955. This permit is to be amended to delete the Control Area containing approximately 25 acres, effective 1 May 1962. The access road is covered in Special Use Permit LA-1069 dated 27 February 1956, which is also to be amended to delete the access road to the Control Area (Magic Mountain). special Use Permits LA-974 and LA-976 dated 17 August 1956 and 6 September 1956, respectively, covering water line and power line for Control Area are to be terminated as of 30 April 1962. (COE: Shipley, May 1, 1962)

The Forest Service response was delayed for a considerable period of time. It was not until March 6, 1963 that Forest Supervisor, Sim E. Jarvi, responded. The reasons for this delay are not documented, but they were probably related to the demolition and removal of facilities at the installation. Jarvi requested additional information noting:

> This is to advise you that in accordance with your request in your letter of May 1, 1962, the following permits are terminated effective as of 30 April 1962.
>
> > Permit LA 1974 dated 17 August 1956 covering water system for the Control Area (Magic Mt.) Site LA-98.
> >
> > Permit LA 976 dated 6 September 1956 covering power line for the Control Area (Magic Mt.) Site LA-98.
>
> The access road to Control Area (Magic Mt.) Site LA-98 is included in a master Special Use Permit LA 1069 dated 27 February 1957. This permit was amended on 7 December 1962 to delete the above

access road. This amendment was sent to your office with our letter of 12 December 1962.

This should complete all needed action on NIKE Site LA-98 except amendment of Special Use Permit LA-907 dated 17 October 1955 covering the Launcher and Control Areas (Lang and Magic Mt.).

The information was quickly provided by the District Engineer, and on May 24, 1963 the final permits were terminated to complete the second phase of the Magic Mountain/Lang deactivation.

The third deactivation phase consisted of the closure of the facility at Lang Station (98-L) which had become a Battalion Headquarters. Plans were made to implement this in the summer of 1968 and a formal announcement was made on August 16. The closure was a direct result of the Revenue and Expenditures Control Act of 1968, which forced budget cuts brought on by the Vietnam War. The deadline for Army evacuation of the base was December 31, 1968. Subsequently, the property was officially declared to be surplus by the Department of Defense on October 15, 1968.

The December 31, 1968 target date was apparently not met as the 1969 Station Lists show that the base was still occupied in June of that year. This was probably only a small crew, primarily employed for security reasons, for the Army had completely abandoned the site by 1970.

SECTION XI

RECOMMENDATIONS

As a result of investigations conducted, it is recommended that Mt. Gleason (Nike site LA-09-L0) and Los Pinetos (Nike site LA-94-C&L) are eligible for inclusion in the National Register of Historic Places. This recommendation is in accordance with published federal guidelines and is made primarily in relation to National Register Criterion A and Criterion C (36 CFR 60.4) as discussed in Section I of this report. These two sites also qualify under the previously described (Section I) Guidelines relating to properties of "exceptional importance." One point must be underscored, this recommendation applies to all of the facilities located at each site and not just the launch areas. Each installation must be considered as a whole rather than as component parts. Conversely, it has been determined that Barley Flats (Nike site LA-09) and Magic Mountain (Nike site LA-98-C&L) are not eligible to the National Register of Historic Places.

The recommendations for Mt. Gleason and Los Pinetos have been made for the following reasons and are summarized from the discussion presented in Section X of this report.

MT. GLEASON (LA-04-L)

Criterion A: Broad Patterns of History

The Mt. Gleason installation was the first Nike site planned, built and operated in the Angeles National Forest. Its construction was a high priority, it was built during a very short period of time, and it was actually operative before water and sewer lines were installed. For these reasons, Mt. Gleason strongly reflects the broader needs and goals of the American military establishment in relation to air defense during the mid-1950's. Rushed to completion and into operation, Mt. Gleason symbolizes the nationwide American effort to counteract the potential "Red Scare" of enemy intervention.

More importantly, as the first Nike site under construction, Mt. Gleason set a precedent for subsequent Forest Service actions involving all other Nike sites under their jurisdiction. These actions became increasingly restrictive as the Forest Service realized the magnitude of the Nike Program. Finally, the closure of the facility and the resulting problems in the transfer of special use permits reflect a nationwide shift in attitude with particular reference to environmental issues. The facility was, for example, the only one to be considered in relation to the National Environmental Policy Act.

In summary, Mt. Gleason had the longest duration of any Nike installation in the Angeles National Forest. It was continuously manned from 1955-1974, and its operational period highlights the changing environmental vs military priorities that are a part of American history. Specifically, this installation was a "test case" both at its inception and its closure, and illustrates the full range of historical issues better than any other documented installation in the Los Angeles area.

Criterion C: Distinctive Characteristics.

Mt. Gleason is the highest Nike installation in the world. As a result of the site's altitude, the design of the facility is unusual. Specifically, the building's roofs are steeply pitched to prevent damage from anticipated snowfall. Further, this architectural design is the first example of its type in the Los Angeles area.

Mt. Gleason is a clear and distinctive example of the manner in which architecture is directly influenced by geographic location. In addition, the barracks, administrative buildings, support facilities and underground storage magazines are in an excellent state of preservation.

Criterion: Exceptional Importance

The Mt. Gleason site qualifies as a property of exceptional importance because the history of the site is well documented and its historical significance within the greater Los Angeles Defense Area provides the perspective from which to make a clear determination. This site was the first base constructed in the Angeles Forest Nike system and established a precedent for all other subsequent installations. It was the last base to be deactivated within the Angeles Forest and directly reflects a nationwide change in attitude towards the treatment and disposal of military installations as part of federal environmental legislation. As such, Mt. Gleason occupies an unique place within the mainstream of American military and environmental history. This history is secure, and will retain these distinctive characteristics for all times.

Further, the Mt. Gleason site is a part of a nationwide defense network which was terminated in the mid-1970's. Since that time, the majority of these installations have been altered or destroyed. Mt. Gleason, however, retains its integrity, and is an excellent "survivor" example of a group of resources representative of an entire period of military history.

The Mt. Gleason site is of exceptional local significance due to its geographical location and its role as a precedent case. It is also of global interest as it is the highest Nike site in the world. In brief, the geographical location of the site is reflective of its exceptional importance.

LOS PINETOS (LA-94-C&L)

Criterion A: Broad Patterns of History

The Los Pinetos site was an integral part of the Nike system for the Los Angeles Defense Area from 1955 to 1968. The site is, therefore, associated with an entire developmental period of military history which made a significant contribution both to industrial technology and the policy making decisions of American government during the late 1950s and 1960s.

Criterion C: Distinctive Characteristics

Los Pinetos is the most intact of all the Nike installations in the Angeles National Forest. Unit C, in the launch area, is particularly complete with bunks and auxiliary equipment, electrical equipment, bulletin boards and signage, remaining on site.

Los Pinetos is also significant in that the three components of a Nike installation (barracks and administration, the launch area and missile assembly area, and the radar control area) are all in a single, rather confined area. This design is unique to the Angeles Forest Nike sites, and is an unusual feature of installations nationwide.

As noted above, the Los Pinetos site has tremendous potential for preservation, perhaps more so than any other site studied to date in the Los Angeles Defense Area. In brief, the current condition of the site is a powerful visual representation of what a functioning Nike base was like.

Criterion: Exceptional Importance

Los Pinetos is considered exceptionally important due to the site's architectural integrity and to its unique "three component" site plan occupying a limited geographic area. It is doubtful that any Nike site in the Los Angeles area presents a better image of a complete installation than does Los Pinetos. This feeling is heightened by the sweeping panorama view obtained from the radar control and launch areas. In summary, Los Pinetos is the single best example of an historically documented Nike installation in the Los Angeles Defense Area.

BARLEY FLATS/MT. DISAPPOINTMENT (LA-09)

This site was occupied for only a very short period of time, 1956-1961. This was probably due to the fact that it was determined to be unsuitable for conversion from Ajax to Hercules missiles. It is, therefore, not associated historically with the full range of Nike Missile Development and Deployment.

While the site retains much of its architectural integrity, and the architectural design is unusual, Barley Flats is not the first example of its type, and therefore does not qualify as eligible under this criterion.

MAGIC MOUNTAIN/LANG (LA-98-C&L)

The battery control area (98-C) has been demolished with the exception of two water tanks. In addition, this facility was deactivated in 1961 and was the last unit to be placed into operation within the boundaries of the Angeles National Forest, so the Magic Mountain site had a very short tenure as a defense installation.

The launch and administrative area at Lang Station (98-L) is the single largest complex studied. It has, however, been altered by new construction and vandalism, and exhibits no unique architectural features.

ANGELES

Investigations and evaluation of the Nike sites within the Angeles National Forest resulted in the recommendation that Mt. Gleason (Nike site LA-09-LO) and Los Pinetos (Nike site LA-94-C&L) are eligible to the National Register of Historic Places. Prior to any alteration or demolition of the Mt. Gleason or Los Pinetos sites, all of their built features should be recorded according to Historic American Building Survey (HABS) and Historic American Engineering Record (HAER) guidelines.

SECTION XII

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